APPENDIX D – AIR QUALITY

D.1 NONRADIOLOGICAL AIR QUALITY

This appendix supplements the analytical results presented in the Site-Wide Environmental Impact Statement (SWEIS) main text, Sections 5.3.7, 5.4.7, and 5.5.7. Modeling inputs and assumptions support the results for the nonradiological air quality environmental consequences. Chemical screening and refined analysis results are presented for receptor locations in the vicinity of Sandia National Laboratories/New Mexico (SNL/NM). The maximum chemical concentrations generated by an SNL/NM activity are calculated for selected receptor locations.

Site-specific emissions from SNL/NM are modeled in accordance with the guidelines presented in the U. S. Environmental Protection Agency (EPA) *Guideline on Air Quality Models* (40 *Code of Federal Regulations* [CFR] Part 51, Appendix W), the New Mexico Air Pollution Control Bureau *Dispersion Modeling Guidelines* (NMAPCB 1996), and the Albuquerque Environmental Health Department (AEHD) *Permit Modeling Guidelines* (AEHD 1995).

Impacts were estimated from criteria pollutant emissions, chemical pollutant emissions, mobile (vehicular) source emissions, and open burning by modeling the emissions associated with each alternative during normal operations and comparing the resulting pollutant concentrations to the National Ambient Air Quality Standards (NAAQS), the New Mexico Ambient Air Quality Standards (NMAAQS), and the Albuquerque/ Bernalillo County Air Quality Control Board (A/BC AQCB) regulations for criteria pollutants, and guidelines for chemical concentrations. These regulations and guidelines represent conditions to which it is believed that nearly all of the general public may be repeatedly exposed, day after day, without adverse health effects.

D.1.1 Air Quality Dispersion Models

The EPA's *Industrial Source Complex Air Quality Dispersion Model* (*ISCST3*) was used to estimate the criteria pollutant concentrations from stationary sources at SNL/NM (EPA 1995a). This model was selected as the most appropriate model to perform the air dispersion modeling analysis from continuous emission sources because it is designed to support the EPA regulatory modeling program and is capable of handling multiple sources, including different source types. This model was also used to estimate chemical concentrations from emissions of chemicals from SNL/NM facilities. It estimates pollutant concentrations from normal operations at SNL/NM from stationary sources.

The *Mobile Source Emission Factor* (*MOBILE5a*) computer model (EPA 1994), which is the EPA-approved model for estimating emission factors from mobile sources, in conjunction with state implementation plans, was used to estimate carbon monoxide emissions from vehicular traffic. Emissions of carbon monoxide from vehicles represent the greatest contribution to overall carbon monoxide emissions in the region of influence (ROI). The model calculates emission factors in grams per mile, from which annual carbon monoxide emissions from mobile sources are calculated.

The *Open Burn/Open Detonation Dispersion Model (OBODM)* was used to evaluate the potential air quality impacts of open-air burning (Bjorklund et al. 1997). *OBODM* predicts the downwind transport and dispersion of pollutants using cloud rise and dispersion model algorithms. The model is used to estimate the pollutant concentrations from open burning at the Fire Testing Facility.

D.1.2 Criteria Pollutants

The criteria pollutants modeled using *ISCST3* include carbon monoxide, sulfur dioxide, nitrogen dioxide, total suspended particulates, and particulate matter equal to or less than 10 µm diameter (PM_{10}). Concentrations of lead, ozone, hydrogen sulfide, and total reduced sulfur are provided from monitoring data where available. As of September 16, 1997, in addition to the PM_{10} NAAQS, a new NAAQS became effective for particulate matter equal to or less than 2.5 microns in diameter ($PM_{2.5}$). This new standard will not require imposition of local area controls until 2005, and compliance determinations will not be required until 2008. Additionally, the EPA revised the NAAQS and associated reference method for determining ozone attainment on July 19, 1997. This standard will also be applicable to SNL/NM. Figure D.1–1 presents the process used for evaluating the criteria pollutant emissions from SNL/NM.

The estimated emissions of criteria pollutants under the alternatives are modeled using the EPA-recommended *ISCST3* (dated 97363) model to estimate concentrations of criteria pollutants at or beyond the SNL/NM

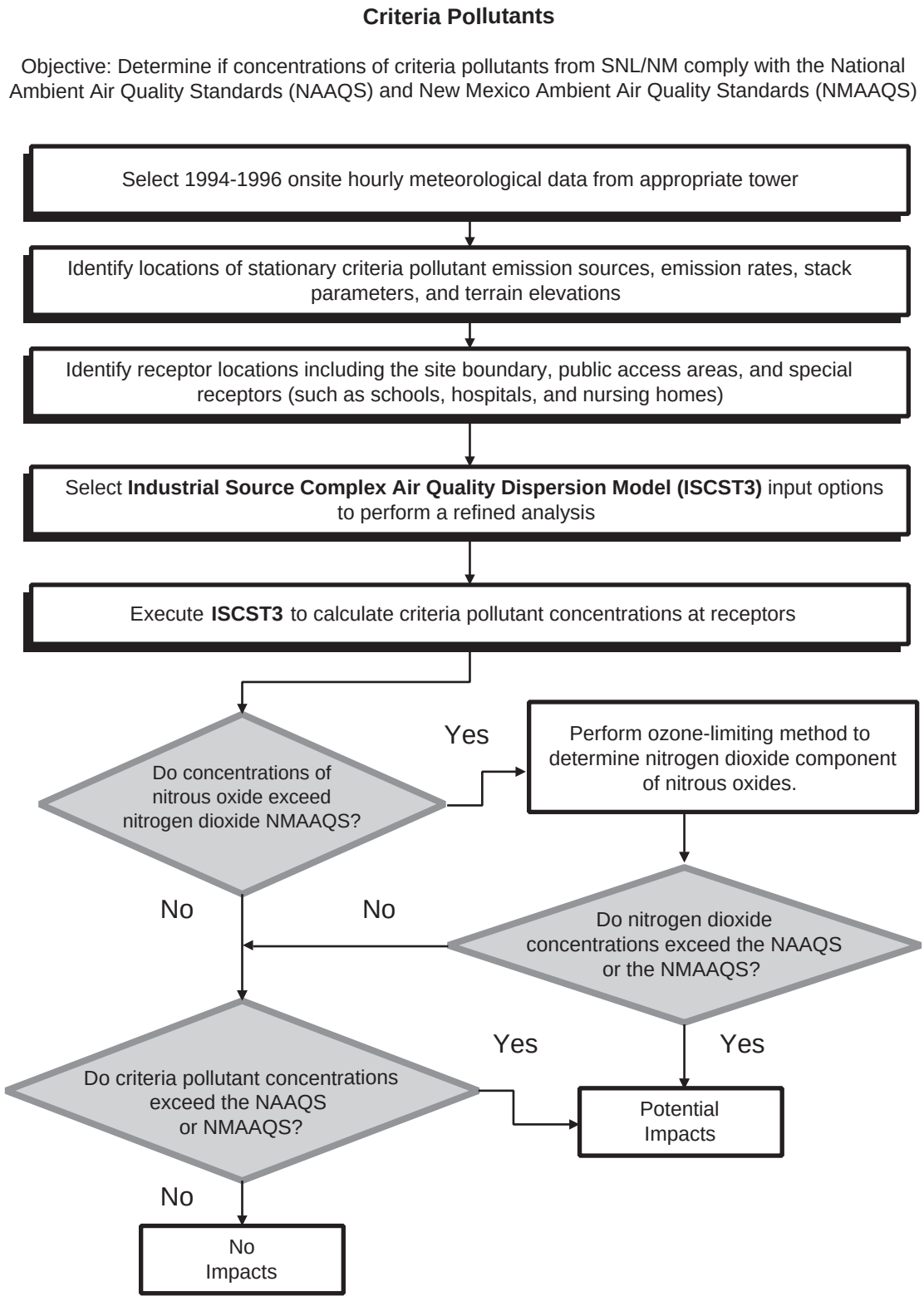

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Figure D.1–1. Example Flow Chart For Evaluation of Criteria Pollutants

A multi-step process is used to evaluate criteria pollutants.

boundary, including receptor locations such as public access areas (for example, the National Atomic Museum, hospitals, and schools). For those criteria pollutants for which emission data are not available, onsite monitoring data are presented in lieu of modeling results.

D.1.2.1 Emission Sources

The criteria pollutant emission sources at SNL/NM modeled using *ISCST3* were the following stationary combustion sources located in technical area (TA)-I:

- steam plant
- electric power generator plant
- boiler and emergency generator in Building 701
- 600-kw-capacity generator in Building 870b

Sequential hourly emissions, representing actual emissions for 1996 plus estimated emissions for the boiler and emergency generator in Building 701 and the 600-kW-capacity capacity generator in Building 870b, were used as emission source input to *ISCST3* to estimate criteria pollutant concentrations under the No Action Alternative. In addition to actual emission source locations, exhaust parameters (such as height, diameter, temperature, and flow rate) were based on engineering estimates from actual operating data for those existing emission sources. For future emission sources included in the No Action Alternative modeling, engineering estimates of emissions were made using the EPA *Compilation of Air Pollutant Emission Factors, Volume I* (AP-42) (EPA 1995b). Table D.1–1 presents annual average emission rates for criteria pollutant sources at SNL/NM.

D.1.2.2 Stack Parameters

Based upon the daily fuel usage and operating load conditions, the hourly emission rates, gas exit velocities, and exit temperatures for each of the steam plant boilers were determined. These hourly emission parameters were used as input into the *ISCTS3* model. Table D.1–2 presents an example of the source parameters for the steam plant boilers during a 100 percent load condition. Gas exit velocities vary between natural gas and #2 fuel oil usage.

Table D.1–3 presents the source parameters used for modeling purposes for Building 862 generators.

D.1.2.3 Receptors

Receptor locations include special receptors where concentrations of the public, children, and the infirmed are of special interest, such as public access areas, hospitals, and schools located beyond the SNL/NM boundary. Specific special receptors are included in the following locations:

- Child Development Center-East (Special)
- Child Development Center-West (Special)
- Coronado Club (Special)
- Golf Course
- KAFB Housing
- Kirtland Elementary School (Special)
- Kirtland Underground Munitions and Maintenance Storage Complex (KUMMSC)
- Lovelace Hospital (Special)
- National Atomic Museum (Special)
- Riding Stables
- Sandia Base Elementary School (Special)
- Shandiin Day Care Center (Special)
- Veterans Affairs Medical Center (Special)
- Wherry Elementary School (Special)

Universal transverse mercator (UTM) coordinates for each of the receptor locations were input into the model to determine the pollutant concentrations at that location. The maximum concentration for each criteria pollutant modeled for each of the averaging periods for five years of meteorological data is presented in Section 5.3.7.

D.1.2.4 Meteorological Data

Sequential hourly meteorological data, 1995 and 1996 from tower A15, and 1994, 1995, and 1996 from tower A21, were used as model input to determine the maximum pollutant concentrations based on any one year of meteorology. Data from these meteorological towers were used because of their proximity to the emission sources. Figures D.1–2 and D.1–3 present the annual wind roses for meteorological tower A15, for 1995 and 1996, and for meteorological tower A21, for 1994, 1995, and 1996. In addition, mixing height data from the Albuquerque International Sunport were incorporated with the onsite data to provide a single input file containing all of the above data.

Table D.1–1. Annual Average Emission Rates for Criteria Pollutant Emissions from SNL/NM Sources

SOURCE	FUEL	FUEL USAGE (scf/yr)	UNIT CAPACITY (MMbtu/hr)	CARBON MONOXIDE		NITROGEN DIOXIDE		SULFUR DIOXIDE		PARTICULATE MATTER		TSP	
				EF (lb/10^6 ft^3)	ER (g/sec)	EF (lb/10^6 ft^3)	ER (g/sec)	EF (lb/10^6 ft^3)	ER (g/sec)	EF (lb/10^6 ft^3)	ER (g/sec)	EF (lb/10^6 ft^3)	ER (g/sec)
BOILERS													
Boiler #1	Natural gas	115,932,505	51.550	35.00	0.2273	140.00	0.9093	0.60	0.0039	14.00	0.0909	14.00	0.0909
Boiler #2	Natural gas	83,554,552	39.100	35.00	0.1724	140.00	0.6897	0.60	0.0030	14.00	0.0690	14.00	0.0690
Boiler #3	Natural gas	48,941,341	33.480	35.00	0.1476	140.00	0.5905	0.60	0.0025	14.00	0.0590	14.00	0.0590
Boiler #5	Natural gas	142,776,286	84.63	35.00	0.3732	140.00	1.4929	0.60	0.0064	14.00	0.1493	14.00	0.1493
Boiler #6	Natural gas	349,389,902	142.14	35.00	0.6268	140.00	2.5074	0.60	0.0107	14.00	0.2507	14.00	0.2507
962	Natural gas	118,260,000	13.5	35.00	0.1191	140.00	0.4763	0.60	0.0020	14.00	0.0476	14.00	0.0476

SOURCE	FUEL	FUEL USAGE (gal/yr)	UNIT CAPACITY (MMbtu/hr)	CARBON MONOXIDE		NITROGEN DIOXIDE		SULFUR DIOXIDE		PARTICULATE MATTER		TSP	
				EF (lb/10^3 gal)	ER (g/sec)	EF(lb/10^3 gal)	ER (g/sec)	EF (lb/10^3 gal)	ER (g/sec)	EF (lb/10^3 gal)	ER (g/sec)	EF (lb/10^3 gal)	ER (g/sec)
Boiler #1	#2 fuel oil	2,700,000	87.256	5.00	0.3883	20.00	1.5534	31.24	2.4264	1.00	0.0777	2.00	0.1553
Boiler #2	#2 fuel oil	2,700,000	87.256	5.00	0.3883	20.00	1.5534	31.24	2.4264	1.00	0.0777	2.00	0.1553
Boiler #3	#2 fuel oil	2,700,000	87.256	5.00	0.3883	20.00	1.5534	31.24	2.4264	1.00	0.0777	2.00	0.1553
Boiler #5	#2 fuel oil	4,023,000	130.09	5.00	0.5786	20.00	2.3146	31.24	3.6153	1.00	0.1157	2.00	0.2315
Boiler #6	#2 fuel oil	7,360,000	237.97	5.00	1.0586	20.00	4.2344	31.24	6.6142	1.00	0.2117	2.00	0.4234

Table D.1–1. Annual Average Emission Rates for Criteria Pollutant Emissions from SNL/NM Sources (concluded)

SOURCE	FUEL	FUEL USAGE (gal/yr)	UNIT CAPACITY (MMbtu/hr)	CARBON MONOXIDE		NITROGEN DIOXIDE		SULFUR DIOXIDE		PARTICULATE MATTER		TSP	
				EF (lb/MMbtu/hr)	ER (g/sec)	EF (lb/MMbtu/hr)	ER (g/sec)	EF (lb/MMbtu/hr)	ER (g/sec)	EF (lb/MMbtu/hr)	ER (g/sec)	EF (lb/MMbtu/hr)	ER (g/sec)
GENERATORS													
870B	#2 fuel oil	20,076	2.047	0.85	0.6091	3.20	2.2929	0.222	0.1591	0.10	0.0717	0.07	0.0502
862	#2 fuel oil	80,304	8.188	0.85	2.4362	3.20	9.1717	0.222	0.6363	0.10	0.2866	0.07	0.2006
605	#2 fuel oil	13,049	1.331	0.95	0.4425	4.41	2.0539	0.29	0.1351	0.31	0.1444	0.35	0.1630
701	#2 fuel oil	16,730	1.706	0.85	0.5076	3.20	1.9108	0.222	0.1326	0.10	0.0597	0.07	0.0418

Source: SNL/NM 1997a
EF: emission factor
ER: emission rate
g/sec: grams per second
gal: gallon
lb/ft^3: pounds per cubic foot
lb/MMbtu: pounds per Million British Thermal Units
scf: standard cubic feet
TSP: total suspended particulates
Notes: 1) Heating Value: Natural Gas = 1,000 btu/scf; #2 Fuel Oil = 141,636 btu/gal
2) Emission rates for natural gas are based on boilers operating 2,249, 2,137, 1,462, 1,687, and 2,458 hours for boilers 1, 2, 3, 5, and 6, respectively.
3) Emission rates for #2 fuel oil are based on boilers operating 4,380 hours.
4) Emission rates for generators are based on generators operating 500 hours per year.

Table D.1–2. SNL/NM Steam Plant Source Parameters

BOILER NUMBER	STACK HEIGHT (m)	STACK DIAMETER (m)	EXIT VELOCITY (m/sec)	EXIT TEMPERATURE (°K)	UTM-E (m)	UTM-N (m)	BASE ELEVATION (ft)
1	19.8	1.14	13.9[a]/12.8[b]	391	358,672	3,879,647	5,405
2	19.8	1.14	14.4[a]/12.9[b]	408	358,680	3,879,647	5,405
3	19.8	1.14	14.5[a]/13.7[b]	432	358,694	3,879,647	5,405
5	19.8	1.52	13.4[a]/12.4[b]	468	358,708	3,879,647	5,405
6	19.8	1.52	31.5[a]/26.9[b]	555	358,718	3,879,639	5,405

Source: SNL/NM 1997a
°K: degrees Kelvin
ft: feet
m: meter
m/sec: meters per second
UTM-N: Universal Transverse Mercator-N
UTM-E: Universal Transverse Mercator-E
[a] During natural gas usage
[b] During fuel oil usage

Table D.1–3. SNL/NM Building 862 Generators Source Parameters

STACK HEIGHT (m)	STACK DIAMETER (m)	EXIT VELOCITY (m/sec)	EXIT TEMPERATURE (°K)	UTM-E (m)	UTM-N (m)	ELEVATION (ft)
11.9	0.204	85.3	489	359,205	3,879,742	5,397

Source: SNL/NM 1997a
°K: degrees Kelvin
ft: feet
m: meter
m/sec: meters per second
UTM-E: Universal Transverse Mercator-E
UTM-N: Universal Transverse Mercator-N

D.1.2.5 Model Assumptions

Model assumptions include using the regulatory default options that are identified in Appendix A of the *Guideline on Air Quality Models* (Revised) (EPA 1987), and include the following:

- use stack-tip downwash (except for Schulman-Scire downwash),
- use buoyancy-induced dispersion (except for Schulman-Scire downwash),
- do not use gradual plume rise (except for building downwash),
- use the calms processing routines,
- use upper bound concentration estimates for sources influenced by building downwash from super-squat buildings,
- use default wind speed profile exponents, and
- use default vertical potential temperature gradients.

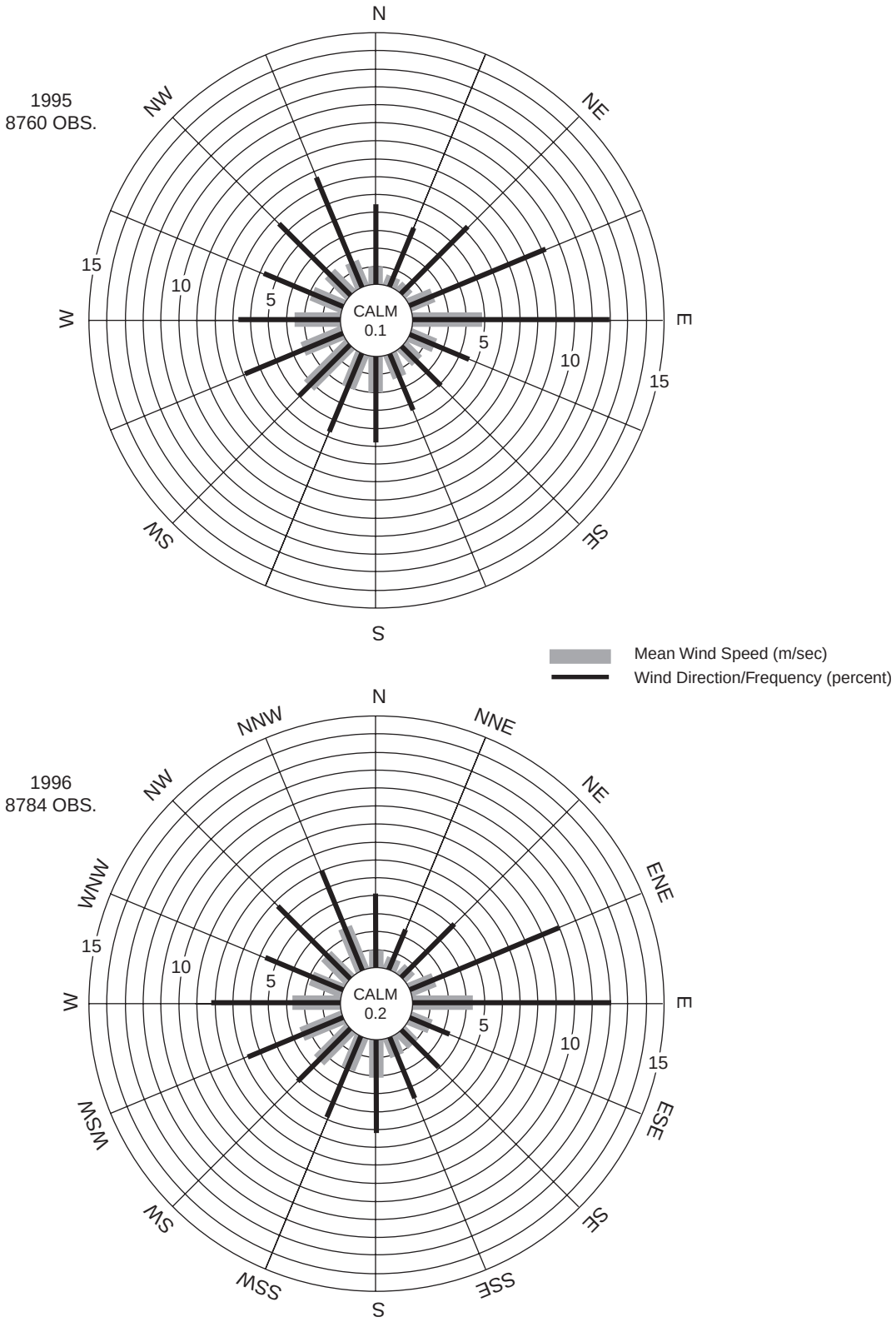
Other assumptions include

- hourly emission rates for natural gas fired boilers,
- constant emission rates for #2 fuel oil-fired boilers and generators,
- constant emission rates for chemical emissions,
- building downwash option for criteria pollutants, and
- rural dispersion.

D.1.2.6 Methodology

The modeling of nitrogen oxides follows a tiered approach to determine the concentration of nitrogen dioxide as a component of nitrogen oxides. Nitrogen dioxide is one of several forms of nitrogen oxides resulting from the combustion of fossil fuels. Federal and state criteria pollutant standards specify nitrogen dioxide as the form of nitrogen oxides for which the standards apply. The emissions from combustion of fossil fuel provided as input into *ISCST3* are those of nitrogen oxides.

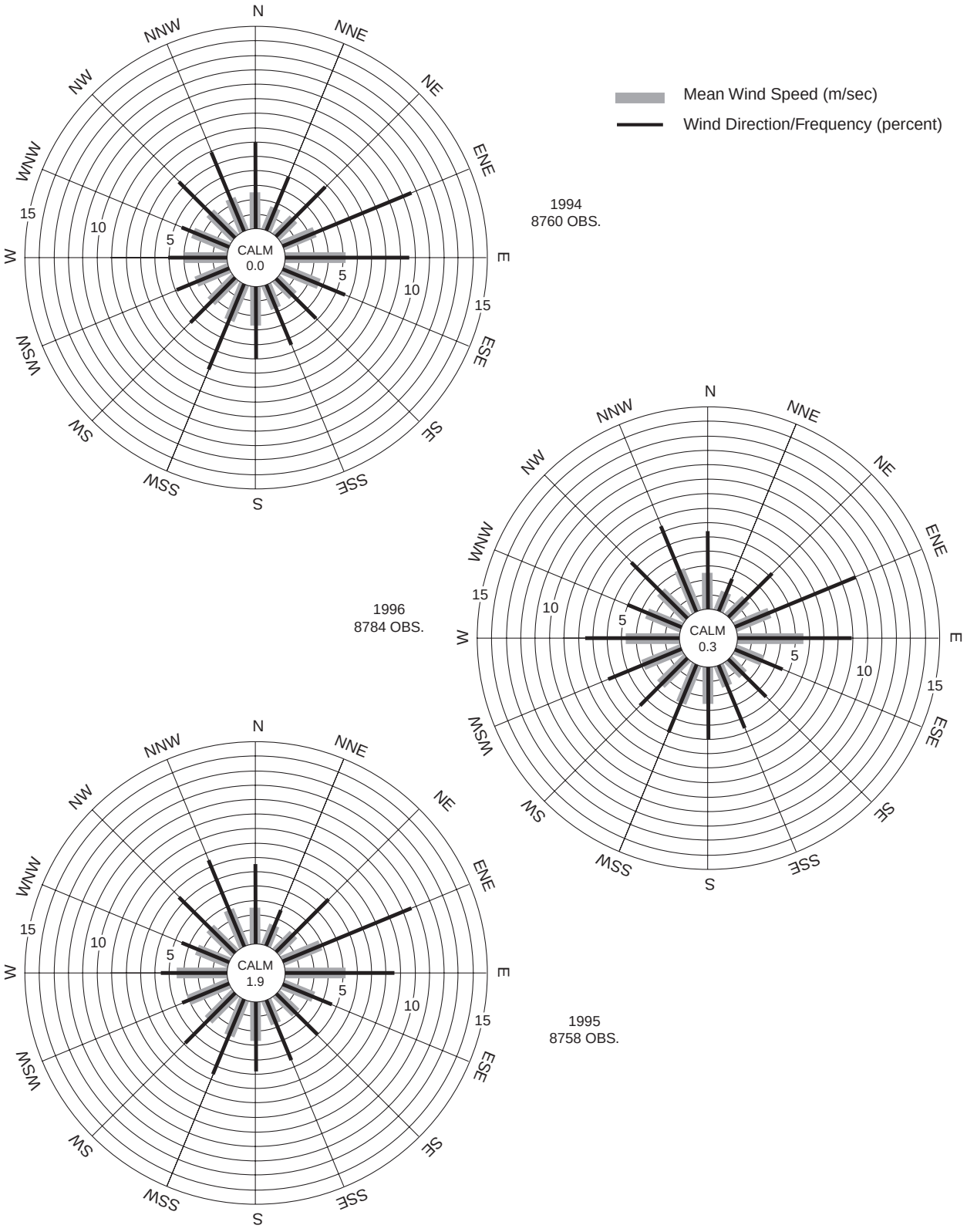
Modeling results for nitrogen oxides, using *ISCST3* for the 24-hour and annual averaging periods, are 0.19 ppm (300 µg/m^3) and 0.02 ppm (28 µg/m^3), respectively. The NMAAQS standards for nitrogen dioxide for the 24-hour and annual averaging periods are 0.10 ppm (156 µg/m^3) and 0.05 ppm (78 µg/m^3), respectively. The modeling results indicate that the nitrogen oxides 24-hour concentrations exceed the NMAAQS standard



Source: SNL/NM 1998j

Figure D.1–2. Annual Wind Rose for Tower A15 at 10-m Level, 1995–1996

Two years of meteorological data, including wind speed and direction, from Tower A15 (at the 10-m level), were used to determine the maximum pollutant concentration.



Source: SNL/NM 1998j

Figure D.1–3. Annual Wind Rose for Tower A21 at 10-m Level, 1994–1996

Three years of meteorological data, including wind speed and direction, from Tower A21 (at the 10-m level), were used to determine maximum pollutant concentrations.

for nitrogen dioxide. If the nitrogen oxides concentration is below the NMAAQS standard for nitrogen dioxide, then no further analysis is necessary to show compliance with the standard. Since the nitrogen oxides concentration is above the standard, a second step must be undertaken to show compliance.

The New Mexico Air Pollution Control Bureau has approved the ozone limiting method (OLM) to estimate nitrogen dioxide concentrations in modeled nitrogen oxides emissions. The EPA model *ISC3_OLM* (Version 96.113) is used to implement the OLM.

The OLM is employed to calculate the nitrogen dioxide component of the nitrogen oxides concentration. The OLM requires representative hourly ozone concentrations to be input into the model. These data are obtained from monitoring station 2R, located in the south valley of the city of Albuquerque approximately 1 mi west of the Rio Grande and 3 mi south of downtown (Figure 4.9–2). This monitoring location is upwind from the criteria pollutant emission sources at SNL/NM and is, therefore, representative of the background ozone in the area. The OLM also requires that background nitrogen dioxide concentrations be added to the model-calculated nitrogen dioxide concentrations to obtain a representative concentration of nitrogen dioxide. Monitoring station 2R does not measure nitrogen dioxide; therefore, the maximum 24-hour average concentration and the annual average concentration of nitrogen dioxide, measured in 1996 at monitoring station 2ZR, are added to the respective modeled concentrations. Station 2ZR is collocated with monitoring station 2ZQ in the city of Rio Rancho, west of Albuquerque, a rapidly growing area on the city's west side, and provides a reasonable background estimate of nitrogen dioxide not influenced by SNL/NM emissions. Figure 4.9–2 shows the location of this monitoring station.

D.1.3 Chemical Pollutants

The pollutants and laboratory operations that may cause significant air quality and human health impacts at SNL/NM were identified through a progressive series of screening steps, each step involving fewer pollutants that were then screened by methods that involved more rigorous and realistic emission rates than the step before. This approach, consistent with EPA guidance, focused detailed analyses only on those chemicals that had a reasonable chance of being of concern.

The objective was to determine potential impacts from routine emissions (emissions occurring daily from ongoing normal operations at SNL/NM). Databases available at SNL/NM identifying the thousands of chemical products used at SNL/NM were screened and the potential sources of routine chemical air emissions determined.

First, all site-wide chemical databases available for SNL/NM were identified. The three sources of chemical data for SNL/NM are the Chemical Information System (CIS), Hazardous Chemical Purchases Inventory (HCPI), and CheMaster. Each was developed for a slightly different purpose, has some specific and/or unique information, and has overlapping information. No database was complete enough to use exclusively; therefore, the data are used collectively. CIS is the most current, has annual purchases by building number, is versatile in the formatting of the data, and tracks 90 percent of all chemical purchases by SNL/NM. HCPI provides the chemical product ingredients regulated as hazardous air pollutants (HAPs), and toxic air pollutants (TAPs), as well as volatile organic compound (VOC) ingredients. It also captures the "just in time" (JIT) chemical purchases not tracked in CIS. The CheMaster database contains a 1996 chemical inventory collected from a wall-to-wall survey performed at SNL/NM to determine the maximum inventories of hazardous chemicals. The chemical volumes are maximum potential quantities; CheMaster captures older chemical inventories potentially not documented in CIS as a recent purchase. The CheMaster was also used as the source of information needed for the 1997 study identifying the most significant chemical hazards at SNL/NM for Emergency Planning/Emergency Response purposes.

At SNL/NM each chemical (product) purchased is inventoried in the CIS database. The hazardous ingredients of these chemical products are determined and then categorized as HAPs, TAPs or VOCs, as applicable, and tracked by the HCPI database. Large quantities of HAPs, TAPs, or VOCs used and potentially released to the air from routine operations are regulated under SARA Title III hazardous substance control and reporting requirements. HCPI is in place to meet these annual tracking and reporting requirements. The HCPI database groups and sums the total quantities of individual HAPs, TAPs, and VOCs by name and total quantities per building. The total pounds of HAPs, TAPs, and VOCs purchased by SNL/NM are reported annually as required by the *Superfund Amendments and Reauthorization Act* (SARA) Title III (42 USC 11001).

To supplement data from CIS and HCPI, a 1997 SNL/NM study for Emergency Planning/Hazards

Ozone Limiting Method

The following is a simplified explanation of the basic chemistry relevant to the ozone limiting method (OLM).

First, the relatively high temperatures typical of most combustion sources promote the formation of nitrogen dioxide by the following thermal reaction:

$2\ NO + O_2 \rightarrow 2\ NO_2$ In-stack formation of nitrogen dioxide

The OLM assumes that 10 percent of the oxides of nitrogen emission in the exhaust is converted to nitrogen dioxide by this reaction, and no further conversion by this reaction occurs once the exhaust leaves the stack. This assumption is thought to be conservative, as more typically, only 5 percent of the oxides of nitrogen emission is nitrogen dioxide at the stack exit. The remaining 90 percent of the oxides of nitrogen emission is assumed to be nitric oxide.

As the exhaust leaves the stack and mixes with the ambient air, the nitric oxide reacts with ambient ozone to form nitrogen dioxide and molecular oxygen:

$NO + O_3 \rightarrow NO_2 + O_2$ Oxidation of nitric oxide by ambient ozone

The OLM assumes that at any given receptor location, the amount of nitric oxide that is converted to nitrogen dioxide by this reaction is proportional to the ambient ozone concentration. If the ozone concentration is less than the nitric oxide concentration, the amount of nitrogen dioxide formed by this reaction is limited. If the ozone concentration is greater than or equal to the nitric oxide concentration, all of the nitric oxide is assumed to be converted to nitrogen dioxide.

In the presence of radiation from the sun, ambient nitrogen dioxide can be destroyed:

NO_2 + sunlight $\rightarrow$NO + O Photo-dissociation of nitrogen dioxide

As a conservative assumption, the OLM ignores this reaction.

Another reaction that can form nitrogen dioxide in the atmosphere is the reaction of nitric oxide with reactive hydrocarbons:

NO + HC $\rightarrow$$NO_2$ + HC Oxidation of nitric oxide by reactive hydrocarbons

The OLM also ignores this reaction. This may be a nonconservative assumption with respect to nitrogen dioxide formation in urban/industrial areas with relatively large amounts of reactive hydrocarbon emissions.

NO: nitric oxide
O: oxygen
NO_2: nitrogen dioxide
HC: reactive hydrocarbon
O_2: oxygen
O_3: ozone
Note: Although not used in the equations above, NO_x is known as nitrogen oxides or oxides of nitrogen.
Source: OLM/ARM 1997

Assessment, thoroughly reviewing details of the CheMaster database, was also assessed. The study identified the major chemical hazards at SNL/NM, the sources of the hazard, and the location of the chemical inventory posing the hazard under a 100 percent release accident scenario. Each chemical entered in CheMaster was evaluated for volatility, dispersibility, toxicity, persistence, volume, flammability, and other chemical properties pertinent to assessing the potential for human exposures and health effects through the air pathway. The major chemical hazards identified for emergency response at SNL/NM were identified. Although accidental release of chemicals is not applicable to routine air emissions, results of the study were reviewed as a conservative backup to the information contained in the CIS and HCPI. From a human health impacts standpoint, the objective was to provide a second check of what sources of hazardous chemicals exist at SNL/NM.

Approximately 465 chemicals (out of over 25,000 used at SNL/NM) were identified as the potential sources of routine chemical air emissions from SNL/NM normal operations. This list was individually reviewed for volume and toxicity. Individual facility managers at SNL/NM verified the volumes of chemicals listed and specified any routinely used highly toxic chemicals, applicable to their operations. With this process it is very unlikely that any major sources of routine chemical air emissions are overlooked by the SWEIS analysis. The final verified list of chemicals considered the potential sources of routine chemical air emissions is published in the SNL/NM Facility Safety Information Document. These amounts of HAPs, TAPs, VOCs, and 1996 inventory amounts of major chemical hazards identified by the Emergency Planning study were used in the detailed chemical screening process to estimate maximum emission rates and compared them to health risk based chemical-specific Threshold Emission Values (TEVs).

These hazardous chemicals were categorized into two groups, noncarcinogenic chemicals and carcinogenic chemicals, in order to address the differences in health effects. Fifteen carcinogenic chemicals were associated with five facilities; the remaining chemicals were assessed for noncarcinogenic health effects. Each group was evaluated using a screening technique comparing each chemical's estimated emission rate to a health-risk based TEV. As specified by NEPA, current dose-to-risk conversion factors and the "best available technology" were used in assessing impacts to human health (Appendix E). Consistent with the human health impacts assessment methodology, appropriate health risk values were used in the chemical screening process to derive chemical-specific TEVs. Because of the different health effects (noncarcinogenic and carcinogenic), two methods were applied to derive chemical-specific TEVs.

Available data including Occupational Exposure Limits (OELs), and Inhalation Unit Risk values were researched for the entire list of 465 chemicals, as applicable. Where dose-to-risk information was unavailable, a risk assessment model could not be applied to obtain a quantitative TEV for screening purposes. Therefore, some chemicals without OELs, or Inhalation Unit Risk values could not be given a health risk-based screening assessment. This uncertainty in the analysis resulted in a slight underestimation of health risks, but did not affect the overall conclusions of the SWEIS risk analysis. Based on a review of the regulatory literature, there are possible reasons why a chemical would not have a published OEL and/or a dose-response value.

Chemical manufacturers report new chemical information to the EPA according to requirements specified in Section 4 of the *Toxic Substances Control Act* (TSCA) (15 U.S.C. 2601). A 90-day preliminary hazard assessment process determines whether or not further analysis of the chemical will be required and how soon it must be completed. All information implies that a chemical without an OEL or unit risk value is likely to meet one or more of the following conditions:

- it is not used routinely,
- it is not present or used in regulated quantities,
- it will still be controlled according to general Occupational and Safety and Health Administration (OSHA) requirements (personal protective equipment [PPE], labeling, Material Safety Data Sheet [MSDS] recommendations, and so on),
- it is not designated for regulation (based on an interagency regulatory committee determination),
- it is determined not toxic to the environment or human health, or
- it is used for research and development (R&D) or market research only.

A possible condition where a major chemical hazard at SNL/NM could have been overlooked would be a chemical currently in review and not yet given an OEL, (RfD) or (CSF), or unit risk value, as appropriate. In that case, the chemical would not yet be in use long enough or in large enough quantities at SNL/NM to be a routine air emission or to allow long-term (chronic) exposures to people. The objective of the SWEIS impact analysis, which is to determine potential health impacts to workers and the public from routine emissions (emissions occurring daily from ongoing normal operations at SNL/NM), is therefore, met. If it were possible, through the SWEIS analysis, to expedite or evaluate a chemical in this situation, it would not introduce enough difference to the analytical results to affect the overall results of the human health risk assessment. Since these are unregulated chemicals, it also would not affect the overall results of the air quality analysis.

D.1.3.1 Noncarcinogenic Chemical Screening

The screening analysis for noncarcinogenic chemicals uses four "industry-recognized" guidelines to determine

the most conservative guideline applicable to each chemical. The guidelines are as follows:

- American Conference of Governmental Industrial Hygienists (threshold limit values [TLVs]) (ACGIH 1997)
- OSHA (permissible exposure limits [PELs]) (ACGIH 1997)
- National Institute for Occupational Safety and Health (recommended exposure limits [RELs]) (ACGIH 1997)
- Deutsche Forschungsgemeinschaft (DFG), Federal Republic of Germany, Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (ACGIH 1997).

The minimum guideline value from these references divided by 100 was used as the screening guideline for the noncarcinogenic chemicals. Dividing the guideline by 100 ensures a conservative safety factor for identifying those chemicals of potential public concern. The guideline value divided by 100 is henceforth referred to as OEL/100. Figure D.1–4 presents the process used for evaluating the chemical emissions from SNL/NM.

The second chemical screening level after identifying those noncarcinogenic chemicals contained within SNL/NM databases was to calculate the maximum offsite chemical concentration using an emission rate of 1 g per second in the center of 5 major emitters in TA-I. The maximum 8-hour concentration was calculated using the *ISCST3* model and 5 years of hourly winds and stabilities, with a prototypical stack (33 ft high, 1 ft in diameter, 1.6-ft per second exit velocity, 68°F exit temperature, and a 1-g per second emission rate.)

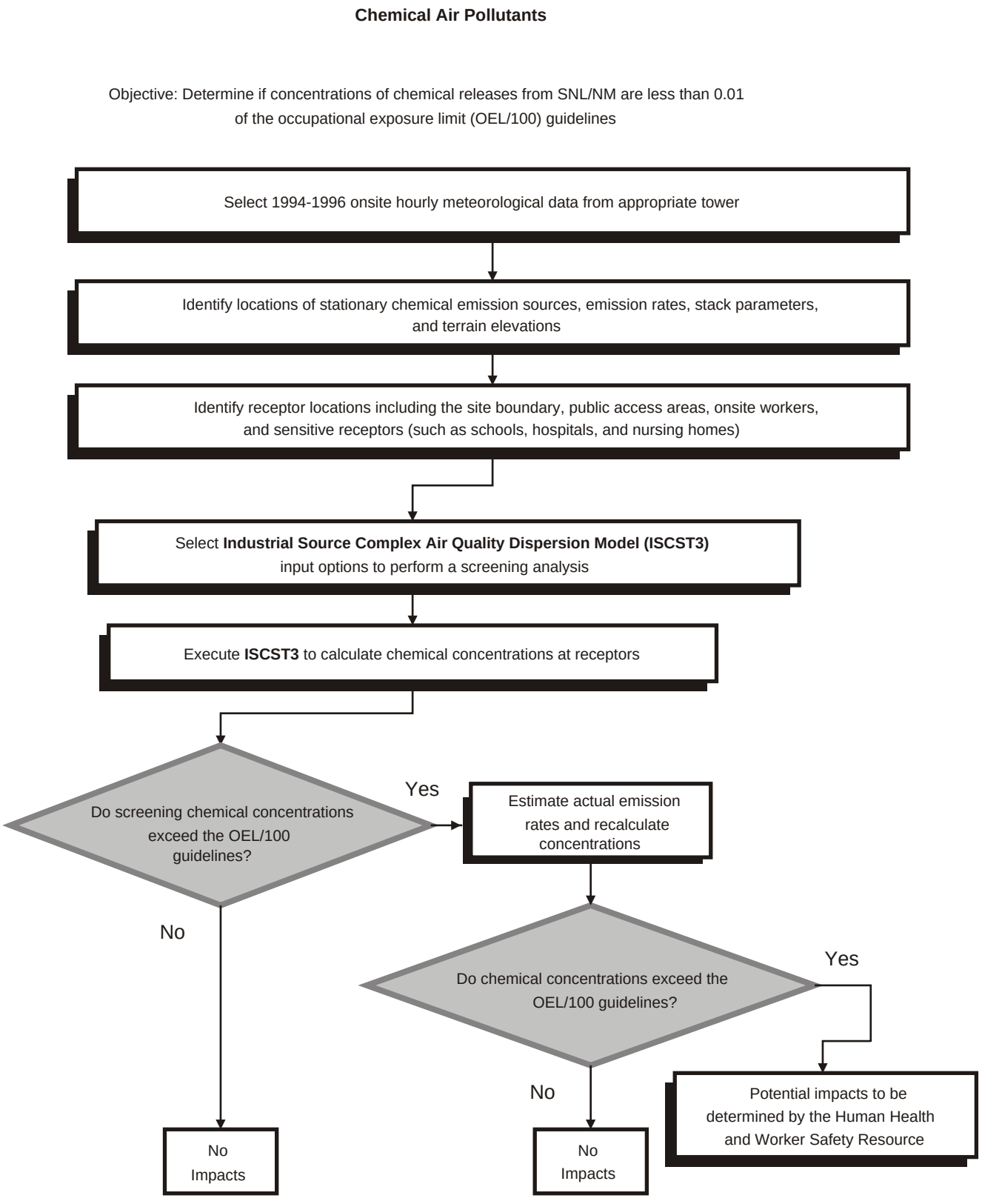
A TEV was calculated by dividing the OEL/100 for each chemical by the calculated maximum 8-hour concentration for a 1-g per second emission rate. The TEV represents the emission rate that would result in an 8-hour chemical concentration equal to the OEL/100 guideline.

The hypothetical emission rate for each noncarcinogenic chemical was calculated by dividing the 1996 purchased amount in grams by 2,000 hours, converted to seconds, to obtain an emission rate in grams per second. The 2,000 hours represents a 40-hour work week times 50 work weeks per year as the number of hours during which the chemicals are emitted. It is conservatively assumed that 100 percent of the purchased chemicals for 1996 for each facility purchasing chemicals are released to the atmosphere from the facility. An exception to this assumption is made for sulfuric acid emissions from Buildings 858 and 878. These buildings are equipped with scrubbers with a greater than 90 percent control efficiency (Kramer 1993). Credit for these scrubbers is applied to emissions of sulfuric acid by reducing the emissions by 90 percent.

Chemicals not having an OEL were not screened using the TEV method (no TEV could be derived). Instead, a review of the chemicals was performed to assess the potential human health effects to prevent screening out any potential health hazards. A general approach was applied. Under OSHA requirements, all chemicals manufactured must be investigated for toxicity (acute and chronic). Manufacturers are required to provided OELs, as appropriate, for the intended use of the chemical and based on its toxic properties. Therefore, where a chemical has no OEL, it is a reasonable assumption that the chemical's toxic properties do not warrant regulation from chronic (long-term) exposures. Many of the chemicals without OELs are as acids, which are chemically not persistent in the environment (they change chemical form rapidly), thereby preventing chronic exposures or even exposures at a distance from the source. These chemicals are acute hazards that are monitored and controlled according to PPE requirements identified on the products MSDSs. Because routine air emissions are associated with larger quantities of chemical use, it is also reasonable to say that chemicals without an OEL, but in small quantities (less than 10 lb), were not associated with routine emissions and did not affect human health by way of the air emissions pathway.

The hypothetical emission rate based upon chemical purchased amounts was then compared to the TEV. If the hypothetical emission rate was greater than the TEV, then the chemical concentration resulting from the hypothetical emission rate may exceed the OEL/100 guideline, and the chemical required further analysis to determine whether it was a potential chemical of concern.

Tables D.1–4 through D.1–19 present the results of the noncarcinogenic chemical screening process, comparing the hypothetical emission rate to the TEV. The tables present 1996 purchases, No Action, Expanded Operations, and Reduced Operations Alternatives results for HAPs, TAPs, VOCs, and additional chemicals from the CheMaster and HCPI databases, respectively. The word TRUE in the results column indicates that the hypothetical emission rate exceeds the TEV.



Source: Original

Figure D.1–4. Flow Chart for Evaluation of Chemical Air Pollutants

Chemical air pollutants are evaluated using the ISCST3 computer model

Tables Key

SOURCES:

Raw Data: SNL/NM 1998a, SNL/NM 1999a
TLVs: ACGIH 1997

ACRONYMS:

CAS:	Chemical Abstracts Service
DF:	dispersion factor (airborne concentration per unit release)
EF:	emissions factor (fraction that is released of a potential source)
ER:	emission rate
FALSE:	Indicates chemical emissions below TEV
g:	gram
g/g:	grams of pollutant per gram of JP-8 fuel
g/yr:	grams per year
g/sec:	grams per second
m^3:	cubic meter
NA:	not available
OEL:	occupational exposure limit
sec:	second
TEV:	threshold emissions value
TRUE:	Indicates chemical emissions above TEV
yr:	year
µg:	microgram
$\mu g/m^3$:	micrograms per cubic meter

BUILDING NUMBERS:

605	Steam Plant
858	Microelectronics Development Laboratory (MDL)
870	Neutron Generator Facility (NGF)
878	Advanced Manufacturing Processes Laboratory (AMPL)
893	Compound Semiconductor Research Laboratory (CSRL)
897	Integrated Materials Research Laboratory (IMRL)
905	Explosive Components Facility (ECF)
963	Repetitive High Energy Pulsed Power Unit II (RHEPP II)
981	Short-Pulse High Intensity Nanosecond X-Radiator (SPHINX)
986	Repetitive High Energy Pulsed Power Unit I (RHEPP I)
6580	Hot Cell Facility (HCF)
6920	Radioactive and Mixed Waste Management Facility (RMWMF)

The final screening involves estimating actual emissions from process engineering data for those noncarcinogenic chemicals whose emission rates, based upon purchased quantities, exceeded the TEV. The estimated actual emission rate is again compared with the TEV to determine whether it is a chemical of concern.

Tables D.1–20, D.1–21, and D.1–22 present the No Action, Expanded Operations, and Reduced Operations Alternatives results of the final screening step for the noncarcinogenic chemicals, comparing emission rates derived from process engineering estimates to the TEV. The process engineering estimates are emission factors based upon facility process knowledge applicable to each of the chemical emissions.

Table D.1–4. 1996 Annual Purchases of Hazardous Air Pollutants (HAPs) Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
605	67-56-1	Methanol	1.89×10^{3}	2.63×10^{-4}	2.60×10^{3}	3.07	FALSE
6580	7647-01-0	Hydrogen chloride	1.09×10^{3}	1.52×10^{-4}	7.00×10^{1}	8.26×10^{-2}	FALSE
858	67-56-1	Methanol	8.38×10^{4}	1.16×10^{-2}	2.60×10^{3}	3.07	FALSE
858	78-93-3	Methyl ethyl ketone (2-butanone)	8.05×10^{2}	1.12×10^{-4}	5.90×10^{3}	6.97	FALSE
858	110-54-3	n-Hexane	1.40×10^{3}	1.94×10^{-4}	1.76×10^{3}	2.08	FALSE
858	7647-01-0	Hydrogen chloride	6.58×10^{4}	9.13×10^{-3}	7.00×10^{1}	8.26×10^{-2}	FALSE
858	7664-39-3	Hydrogen fluoride	5.67×10^{4}	7.87×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
870	67-56-1	Alcohol, Methyl	4.98×10^{5}	6.92×10^{-2}	2,600	3.07	FALSE
870	101-77-9	4,4 -Methylene dianiline (37%)	5.58×10^{4}	7.75×10^{-3}	2.60×10^{3}	9.56×10^{-3}	FALSE
870	7440-47-3	Chromium	5.03×10^{3}	6.99×10^{-4}	5	5.90×10^{-3}	FALSE
870	1333-82-0	Chromium Trioxide	3.18×10^{3}	4.41×10^{-4}	0.01	1.18×10^{-5}	TRUE
870	7440-48-4	Cobalt (17.4%)	3.63×10^{3}	5.04×10^{-4}	0.2	2.36×10^{-4}	TRUE
870	111-42-2	Diethanolamine (85%)	1.02×10^{5}	1.41×10^{-2}	20	2.36×10^{-2}	FALSE
870	107-21-1	Ethylene Glycol	2.23×10^{4}	3.10×10^{-3}	260	3.07×10^{-1}	FALSE
870	7647-01-0	Hydrochloric Acid	3.90×10^{4}	5.42×10^{-3}	70	8.26×10^{-2}	FALSE
870	7664-39-3	Hydrofluoric Acid	3.27×10^{4}	4.54×10^{-3}	20	2.36×10^{-2}	FALSE
870	7439-96-5	Manganese	4.13×10^{3}	5.73×10^{-4}	2	2.36×10^{-3}	FALSE
870	108-10-1	Methyl iso-butyl ketone	2.04×10^{4}	2.83×10^{-3}	820	9.68×10^{-1}	FALSE
870	7718-54-9	Nickel Chloride	2.66×10^{5}	3.70×10^{-2}	1.50×10^{-1}	1.77×10^{-4}	TRUE
870	7786-81-4	Nickel Sulfate	2.66×10^{5}	3.70×10^{-2}	1.50×10^{-1}	1.77×10^{-4}	TRUE
878	67-56-1	Methanol	5.84×10^{4}	8.12×10^{-3}	2.60×10^{3}	3.07	FALSE
878	68-12-2	N,N-dimethylformamide	3.27×10^{1}	4.54×10^{-6}	3.00×10^{2}	3.54×10^{-1}	FALSE

Table D.1–4. 1996 Annual Purchases of Hazardous Air Pollutants (HAPs) Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	71-55-6	1,1,1-Trichloroethane (methyl chloroform)	7.78×10^{4}	1.08×10^{-2}	1.08×10^{4}	1.28×10^{1}	FALSE
878	78-93-3	Methyl ethyl ketone (2-butanone)	3.40×10^{3}	4.72×10^{-4}	5.90×10^{3}	6.97	FALSE
878	79-10-7	Acrylic acid	2.06×10^{2}	2.86×10^{-5}	5.90×10^{1}	6.97×10^{-2}	FALSE
878	80-62-6	Methyl methacrylate	1.12×10^{2}	1.56×10^{-5}	2.10×10^{3}	2.48	FALSE
878	84-74-2	Dibutyl phthalate	3.00	4.17×10^{-7}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	101-68-8	Methylenebis(phenylisocyanate) (MDI)	9.92×10^{1}	1.38×10^{-5}	5.00×10^{-1}	5.90×10^{-4}	FALSE
878	107-21-1	Ethylene glycol	3.29×10^{3}	4.58×10^{-4}	2.60×10^{2}	3.07×10^{-1}	FALSE
878	108-10-1	Methyl isobutyl ketone (hexone)	4.68	6.50×10^{-7}	8.20×10^{2}	9.68×10^{-1}	FALSE
878	108-88-3	Toluene	9.70×10^{3}	1.35×10^{-3}	1.88×10^{3}	2.22	FALSE
878	108-95-2	Phenol	6.06×10^{3}	8.42×10^{-4}	1.90×10^{2}	2.24×10^{-1}	FALSE
878	110-54-3	n-Hexane	9.92×10^{1}	1.38×10^{-5}	1.76×10^{3}	2.08	FALSE
878	111-42-2	Diethanolamine	6.49×10^{3}	9.01×10^{-4}	2.00	2.36×10^{-2}	FALSE
878	123-31-9	Hydroquinone	5.64×10^{-3}	7.83×10^{-10}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	131-11-3	Dimethyl phthalate	6.00	8.33×10^{-7}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	584-84-9	Toluene-2,4-diisocyanate	2.89×10^{3}	4.01×10^{-4}	3.60×10^{-1}	4.25×10^{-4}	FALSE
878	1330-20-7	Xylene	4.47×10^{3}	6.21×10^{-4}	4.34×10^{3}	5.12	FALSE
878	7439-92-1	Lead	5.32×10^{3}	7.38×10^{-4}	5.00×10^{-1}	5.90×10^{-4}	TRUE
878	7439-96-5	Manganese	1.06×10^{4}	1.47×10^{-3}	2.00×10^{1}	2.36×10^{-3}	FALSE
878	7439-97-6	Mercury	2.72×10^{4}	3.78×10^{-3}	2.50×10^{-1}	2.95×10^{-4}	TRUE
878	7440-36-0	Antimony	7.09×10^{2}	9.84×10^{-5}	5.00	5.90×10^{-3}	FALSE
878	7440-47-3	Chromium (II) compounds, as chromium	1.88×10^{4}	2.61×10^{-3}	5.00	5.90×10^{-3}	FALSE

Table D.1–4. 1996 Annual Purchases of Hazardous Air Pollutants (HAPs) Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	7440-48-4	Cobalt	2.02×10^{4}	2.80×10^{-3}	2.00×10^{-1}	2.36×10^{-4}	TRUE
878	7647-01-0	Hydrogen chloride	3.62×10^{3}	5.02×10^{-4}	7.00×10^{1}	8.26×10^{-2}	FALSE
878	7664-39-3	Hydrogen fluoride	8.43×10^{3}	1.17×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	7782-49-2	Selenium hexafluoride as selenium	4.54×10^{1}	6.30×10^{-6}	1.60	1.89×10^{-3}	FALSE
878	7784-42-1	Arsine	3.66×10^{3}	5.08×10^{-4}	1.60	1.89×10^{-3}	FALSE
878	7803-51-2	Phosphine	3.66×10^{3}	5.08×10^{-4}	1.40	1.65×10^{-3}	FALSE
893	67-56-1	Methanol	1.14×10^{5}	1.58×10^{-2}	2.60×10^{3}	3.07	FALSE
893	107-21-1	Ethylene glycol	4.90×10^{4}	6.81×10^{-3}	2.60×10^{2}	3.07×10^{-1}	FALSE
893	108-88-3	Toluene	9.80×10^{3}	1.36×10^{-3}	1.88×10^{3}	2.22	FALSE
893	7647-01-0	Hydrogen chloride	2.49×10^{4}	3.46×10^{-3}	7.00×10^{1}	8.26×10^{-2}	FALSE
893	7664-39-3	Hydrogen fluoride	3.29×10^{4}	4.57×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	62-53-3	Aniline	2.55×10^{2}	3.55×10^{-5}	7.60×10^{1}	8.97×10^{-2}	FALSE
897	67-56-1	Methanol	3.16×10^{4}	4.39×10^{-3}	2.60×10^{3}	3.07	FALSE
897	71-55-6	1,1,1-Trichloroethane (methyl chloroform)	1.20×10^{4}	1.67×10^{-3}	1.08×10^{4}	1.28×10^{1}	FALSE
897	74-88-4	Methyl iodide	5.00×10^{2}	6.94×10^{-5}	1.00×10^{2}	1.18×10^{-1}	FALSE
897	75-05-8	Acetonitrile	6.60×10^{3}	9.17×10^{-4}	3.40×10^{2}	4.01×10^{-1}	FALSE
897	106-42-3	p-Xylene	6.86×10^{3}	9.53×10^{-4}	4.34×10^{3}	5.12	FALSE
897	107-21-1	Ethylene glycol	4.40×10^{3}	6.11×10^{-4}	2.60×10^{2}	3.07×10^{-1}	FALSE
897	108-10-1	Methyl isobutyl ketone (hexone)	1.14×10^{1}	1.58×10^{-6}	8.20×10^{2}	9.68×10^{-1}	FALSE
897	108-88-3	Toluene	3.28×10^{3}	4.55×10^{-4}	1.88×10^{3}	2.22	FALSE
897	108-95-2	Phenol	1.00×10^{2}	1.39×10^{-5}	1.90×10^{2}	2.24×10^{-1}	FALSE
897	110-54-3	n-Hexane	1.41×10^{4}	1.96×10^{-3}	1.76×10^{3}	2.08	FALSE

Table D.1–4. 1996 Annual Purchases of Hazardous Air Pollutants (HAPs) Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
897	123-31-9	Hydroquinone	6.84×10^{2}	9.50×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	7439-92-1	Lead	5.00	6.94×10^{-7}	5.00×10^{-1}	5.90×10^{-4}	FALSE
897	7647-01-0	Hydrogen chloride	3.19×10^{3}	4.44×10^{-4}	7.00×10^{1}	8.26×10^{-2}	FALSE
897	7664-39-3	Hydrogen fluoride	1.64×10^{3}	2.27×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
905	67-56-1	Methanol	5.12×10^{3}	7.11×10^{-4}	2.60×10^{3}	3.07	FALSE
905	75-05-8	Acetonitrile	1.26×10^{4}	1.75×10^{-3}	3.40×10^{2}	4.01×10^{-1}	FALSE
905	108-88-3	Toluene	6.92×10^{2}	9.61×10^{-5}	1.88×10^{3}	2.22	FALSE
981	67-56-1	Methanol	6.06×10^{3}	8.41×10^{-4}	2.60×10^{3}	3.07	FALSE

Table D.1–5. Projected Hazardous Air Pollutant (HAP) Emissions No Action Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
605	67-56-1	Methanol	1.89×10^{3}	2.63×10^{-4}	2.60×10^{3}	3.07	FALSE
6580	7647-01-0	Hydrogen chloride	2.19×10^{3}	3.04×10^{-4}	7.00×10^{1}	8.26×10^{-2}	FALSE
858	67-56-1	Methanol	1.47×10^{5}	2.04×10^{-2}	2.60×10^{3}	3.07	FALSE
858	78-93-3	Methyl ethyl ketone (2-butanone)	1.41×10^{3}	1.96×10^{-4}	5.90×10^{3}	6.97	FALSE
858	110-54-3	n-Hexane	2.45×10^{3}	3.40×10^{-4}	1.76×10^{3}	2.08	FALSE
858	7647-01-0	Hydrogen chloride	1.15×10^{5}	1.6×10^{-2}	7.00×10^{1}	8.26×10^{-2}	FALSE
858	7664-39-3	Hydrogen fluoride	9.92×10^{4}	1.38×10^{-2}	2.00×10^{1}	2.36×10^{-2}	FALSE
870	101-77-9	4,4 -Methylene dianiline (37%)	1.68×10^{5}	2.33×10^{-2}	8.10	9.56×10^{-3}	TRUE
870	67-56-1	Alcohol, Methyl	1.66×10^{6}	2.31×10^{-1}	2.60×10^{3}	3.07	FALSE
870	7440-47-3	Chromium	1.51×10^{4}	2.10×10^{-3}	5	5.90×10^{-3}	FALSE
870	1333-82-0	Chromium Trioxide	8.98×10^{3}	1.25×10^{-3}	1.00×10^{-2}	1.18×10^{-5}	TRUE
870	7440-48-4	Cobalt (17.4%)	1.04×10^{4}	1.45×10^{-3}	2.00×10^{-1}	2.36×10^{-4}	TRUE
870	111-42-2	Diethanolamine (85%)	3.05×10^{5}	4.24×10^{-2}	2.00×10^{1}	2.36×10^{-2}	TRUE
870	107-21-1	Ethylene Glycol	2.23×10^{4}	3.10×10^{-3}	2.60×10^{2}	3.07×10^{-1}	FALSE
870	7647-01-0	Hydrochloric Acid	1.19×10^{5}	1.65×10^{-2}	7.00×10^{1}	8.26×10^{-2}	FALSE
870	7664-39-3	Hydrofluoric Acid	9.86×10^{4}	1.37×10^{-2}	2.00×10^{1}	2.36×10^{-2}	FALSE
870	7439-96-5	Manganese	1.31×10^{4}	1.82×10^{-3}	2	2.36×10^{-3}	FALSE
870	108-10-1	Methyl iso-butyl ketone	6.84×10^{4}	9.50×10^{-3}	8.2×10^{2}	9.68×10^{-1}	FALSE
870	7718-54-9	Nickel Chloride	7.98×10^{5}	1.11×10^{-1}	1.50×10^{-1}	1.77×10^{-4}	TRUE
870	7786-81-4	Nickel Sulfate	7.98×10^{5}	1.11×10^{-1}	1.50×10^{-1}	1.77×10^{-4}	TRUE
878	67-56-1	Methanol	8.77×10^{4}	1.22×10^{-2}	2.60×10^{3}	3.07	FALSE
878	68-12-2	N,N-Dimethylformamide	4.90×10^{1}	6.81×10^{-6}	3.00×10^{2}	3.54×10^{-1}	FALSE

Table D.1–5. Projected Hazardous Air Pollutant (HAP) Emissions No Action Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	71-55-6	1,1,1-Trichloroethane (methyl chloroform)	$1.17x10^{5}$	$1.62x10^{-2}$	$1.08x10^{4}$	$1.28x10^{1}$	FALSE
878	78-93-3	Methyl ethyl ketone (2-butanone)	$5.10x10^{3}$	$7.08x10^{-4}$	$5.90x10^{3}$	6.97	FALSE
878	79-10-7	Acrylic acid	$3.09x10^{2}$	$4.30x10^{-5}$	$5.90x10^{1}$	$6.97x10^{-2}$	FALSE
878	80-62-6	Methyl methacrylate	$1.68x10^{2}$	$2.34x10^{-5}$	$2.10x10^{3}$	2.48	FALSE
878	84-74-2	Dibutyl phthalate	4.50	$6.25x10^{-7}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
878	101-68-8	Methylenebis (phenylisocyanate) (MDI)	$1.49x10^{2}$	$2.07x10^{-5}$	$5.00x10^{-1}$	$5.90x10^{-4}$	FALSE
878	107-21-1	Ethylene glycol	$4.94x10^{3}$	$6.86x10^{-4}$	$2.60x10^{2}$	$3.07x10^{-1}$	FALSE
878	108-10-1	Methyl isobutyl ketone (hexone)	7.02	$9.75x10^{-7}$	$8.20x10^{2}$	$9.68x10^{-1}$	FALSE
878	108-88-3	Toluene	$1.45x10^{4}$	$2.02x10^{-3}$	$1.88x10^{3}$	2.22	FALSE
878	108-95-2	Phenol	$9.10x10^{3}$	$1.26x10^{-3}$	$1.90x10^{2}$	$2.24x10^{-1}$	FALSE
878	110-54-3	n-Hexane	$1.49x10^{2}$	$2.07x10^{-5}$	$1.76x10^{3}$	2.08	FALSE
878	111-42-2	Diethanolamine	$9.73x10^{3}$	$1.35x10^{-3}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
878	123-31-9	Hydroquinone	$8.46x10^{-3}$	$1.17x10^{-9}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
878	131-11-3	Dimethyl phthalate	9.00	$1.25x10^{-6}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
878	584-84-9	Toluene-2,4-diisocyanate	$4.33x10^{3}$	$6.00x10^{-4}$	$3.60x10^{-1}$	$4.25x10^{-4}$	TRUE
878	1330-20-7	Xylene	$6.70x10^{3}$	$9.31x10^{-4}$	$4.34x10^{3}$	5.12	FALSE
878	7439-92-1	Lead	$7.97x10^{3}$	$1.11x10^{-3}$	$5.00x10^{-1}$	$5.90x10^{-4}$	TRUE
878	7439-96-5	Manganese	$1.59x10^{4}$	$2.20x10^{-3}$	2.00	$2.36x10^{-3}$	FALSE
878	7439-97-6	Mercury	$4.08x10^{4}$	$5.67x10^{-3}$	$2.50x10^{-1}$	$2.95x10^{-4}$	TRUE
878	7440-36-0	Antimony	$1.06x10^{3}$	$1.48x10^{-4}$	5.00	$5.90x10^{-3}$	FALSE
878	7440-47-3	Chromium (II) compounds, as chromium	$2.82x10^{4}$	$3.91x10^{-3}$	5.00	$5.90x10^{-3}$	FALSE
878	7440-48-4	Cobalt	$3.03x10^{4}$	$4.21x10^{-3}$	$2.00x10^{-1}$	$2.36x10^{-4}$	TRUE

Table D.1–5. Projected Hazardous Air Pollutant (HAP) Emissions No Action Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	7647-01-0	Hydrogen chloride	5.43×10^{3}	7.54×10^{-4}	7.00×10^{1}	8.26×10^{-2}	FALSE
878	7664-39-3	Hydrogen fluoride	1.26×10^{4}	1.76×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	7782-49-2	Selenium hexafluoride as selenium	6.80×10^{1}	9.45×10^{-6}	1.60	1.89×10^{-3}	FALSE
878	7784-42-1	Arsine	5.49×10^{3}	7.62×10^{-4}	1.60	1.89×10^{-3}	FALSE
878	7803-51-2	Phosphine	5.49×10^{3}	7.62×10^{-4}	1.40	1.65×10^{-3}	FALSE
893	67-56-1	Methanol	1.14×10^{5}	1.58×10^{-2}	2.60×10^{3}	3.07	FALSE
893	107-21-1	Ethylene glycol	4.90×10^{4}	6.81×10^{-3}	2.60×10^{2}	3.07×10^{-1}	FALSE
893	108-88-3	Toluene	9.80×10^{3}	1.36×10^{-3}	1.88×10^{3}	2.22	FALSE
893	7647-01-0	Hydrogen chloride	2.49×10^{4}	3.46×10^{-3}	7.00×10^{1}	8.26×10^{-2}	FALSE
893	7664-39-3	Hydrogen fluoride	3.29×10^{4}	4.57×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	62-53-3	Aniline	2.55×10^{2}	3.55×10^{-5}	7.60×10^{1}	8.97×10^{-2}	FALSE
897	67-56-1	Methanol	3.16×10^{4}	4.39×10^{-3}	2.60×10^{3}	3.07	FALSE
897	71-55-6	1,1,1-Trichloroethane (methyl chloroform)	1.20×10^{4}	1.67×10^{-3}	1.08×10^{4}	1.28×10^{1}	FALSE
897	74-88-4	Methyl iodide	5.00×10^{2}	6.94×10^{-5}	1.00×10^{2}	1.18×10^{-1}	FALSE
897	75-05-8	Acetonitrile	6.60×10^{3}	9.17×10^{-4}	3.40×10^{2}	4.01×10^{-1}	FALSE
897	106-42-3	p-Xylene	6.86×10^{3}	9.53×10^{-4}	4.34×10^{3}	5.12	FALSE
897	107-21-1	Ethylene glycol	4.40×10^{3}	6.11×10^{-4}	2.60×10^{2}	3.07×10^{-1}	FALSE
897	108-10-1	Methyl isobutyl ketone (hexone)	1.14×10^{1}	1.58×10^{-6}	8.20×10^{2}	9.68×10^{-1}	FALSE
897	108-88-3	Toluene	3.28×10^{3}	4.55×10^{-4}	1.88×10^{3}	2.22	FALSE
897	108-95-2	Phenol	1.00×10^{2}	1.39×10^{-5}	1.90×10^{2}	2.24×10^{-1}	FALSE
897	110-54-3	n-Hexane	1.41×10^{4}	1.96×10^{-3}	1.76×10^{3}	2.08	FALSE
897	123-31-9	Hydroquinone	6.84×10^{2}	9.50×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE

Table D.1–5. Projected Hazardous Air Pollutant (HAP) Emissions No Action Alternative Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
897	7439-92-1	Lead	5.00	6.94×10^{-7}	5.00×10^{-1}	5.90×10^{-4}	FALSE
897	7647-01-0	Hydrogen chloride	3.19×10^{3}	4.44×10^{-4}	7.00×10^{1}	8.26×10^{-2}	FALSE
897	7664-39-3	Hydrogen fluoride	1.64×10^{3}	2.27×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
905	67-56-1	Methanol	1.02×10^{4}	1.42×10^{-3}	2.60×10^{3}	3.07	FALSE
905	75-05-8	Acetonitrile	2.52×10^{4}	3.49×10^{-3}	3.40×10^{2}	4.01×10^{-1}	FALSE
905	108-88-3	Toluene	1.38×10^{3}	1.92×10^{-4}	1.88×10^{3}	2.22	FALSE
981	67-56-1	Methanol	1.82×10^{4}	2.52×10^{-3}	2.60×10^{3}	3.07	FALSE

Table D.1–6. Projected Hazardous Air Pollutant (HAP) Emissions Expanded Operations Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
605	67-56-1	Methanol	1.89×10^{3}	2.63×10^{-4}	2.60×10^{3}	3.07	FALSE
6580	7647-01-0	Hydrogen chloride	6.57×10^{3}	9.12×10^{-4}	7.00×10^{1}	8.26×10^{-2}	FALSE
858	67-56-1	Methanol	1.57×10^{5}	2.18×10^{-2}	2.60×10^{3}	3.07	FALSE
858	78-93-3	Methyl ethyl ketone (2-butanone)	1.51×10^{3}	2.10×10^{-4}	5.90×10^{3}	6.97	FALSE
858	110-54-3	n-Hexane	2.62×10^{3}	3.65×10^{-4}	1.76×10^{3}	2.08	FALSE
858	7647-01-0	Hydrogen chloride	1.23×10^{5}	1.71×10^{-2}	7.00×10^{1}	8.26×10^{-2}	FALSE
858	7664-39-3	Hydrogen fluoride	1.06×10^{5}	1.48×10^{-2}	2.00×10^{1}	2.36×10^{-2}	FALSE
870	101-77-9	4,4-Methylene dianiline (37%)	1.68×10^{5}	2.33×10^{-2}	8.10	9.56×10^{-3}	TRUE
870	67-56-1	Alcohol, Methyl	1.66×10^{6}	2.31×10^{-1}	2.60×10^{3}	3.07	FALSE
870	7440-47-3	Chromium	1.51×10^{4}	2.10×10^{-3}	5	5.90×10^{-3}	FALSE
870	1333-82-0	Chromium Trioxide	8.98×10^{3}	1.25×10^{-3}	1.00×10^{-2}	1.18×10^{-5}	TRUE
870	7440-48-4	Cobalt (17.4%)	1.04×10^{4}	1.45×10^{-3}	2.00×10^{-1}	2.36×10^{-4}	TRUE
870	111-42-2	Diethanolamine (85%)	3.05×10^{5}	4.24×10^{-2}	2.00×10^{1}	2.36×10^{-2}	TRUE
870	107-21-1	Ethylene Glycol	2.23×10^{4}	3.10×10^{-3}	2.60×10^{2}	3.07×10^{-1}	FALSE
870	7647-01-0	Hydrochloric Acid	1.19×10^{5}	1.65×10^{-2}	7.00×10^{1}	8.26×10^{-2}	FALSE
870	7664-39-3	Hydrofluoric Acid	9.86×10^{4}	1.37×10^{-2}	2.00×10^{1}	2.36×10^{-2}	FALSE
870	7439-96-5	Manganese	1.31×10^{4}	1.82×10^{-3}	2	2.36×10^{-3}	FALSE
870	108-10-1	Methyl iso-butyl ketone	6.84×10^{4}	9.50×10^{-3}	8.2×10^{2}	9.68×10^{-1}	FALSE
870	7718-54-9	Nickel Chloride	7.98×10^{5}	1.11×10^{-1}	1.50×10^{-1}	1.77×10^{-4}	TRUE
870	7786-81-4	Nickel Sulfate	7.98×10^{5}	1.11×10^{-1}	1.50×10^{-1}	1.77×10^{-4}	TRUE
878	67-56-1	Methanol	1.17×10^{5}	1.62×10^{-2}	2.60×10^{3}	3.07	FALSE
878	68-12-2	N,N-Dimethylformamide	6.54×10^{1}	9.08×10^{-6}	3.00×10^{2}	3.54×10^{-1}	FALSE

Table D.1–6. Projected Hazardous Air Pollutant (HAP) Emissions Expanded Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	71-55-6	1,1,1-Trichloroethane (methyl chloroform)	$1.56x10^{5}$	$2.16x10^{-2}$	$1.08x10^{4}$	$1.28x10^{1}$	FALSE
878	78-93-3	Methyl ethyl ketone (2-butanone)	$6.80x10^{3}$	$9.44x10^{-4}$	$5.90x10^{3}$	6.97	FALSE
878	79-10-7	Acrylic acid	$4.12x10^{2}$	$5.73x10^{-5}$	$5.90x10^{1}$	$6.97x10^{-2}$	FALSE
878	80-62-6	Methyl methacrylate	$2.24x10^{2}$	$3.12x10^{-5}$	$2.10x10^{3}$	2.48	FALSE
878	84-74-2	Dibutyl phthalate	6.00	$8.33x10^{-7}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
878	101-68-8	Methylenebis(phenylisocyanate) (MDI)	$1.98x10^{2}$	$2.76x10^{-5}$	$5.00x10^{-1}$	$5.90x10^{-4}$	FALSE
878	107-21-1	Ethylene glycol	$6.59x10^{3}$	$9.15x10^{-4}$	$2.60x10^{2}$	$3.07x10^{-1}$	FALSE
878	108-10-1	Methyl isobutyl ketone (hexone)	9.36	$1.30x10^{-6}$	$8.20x10^{2}$	$9.68x10^{-1}$	FALSE
878	108-88-3	Toluene	$1.94x10^{4}$	$2.69x10^{-3}$	$1.88x10^{3}$	2.22	FALSE
878	108-95-2	Phenol	$1.21x10^{4}$	$1.68x10^{-3}$	$1.90x10^{2}$	$2.24x10^{-1}$	FALSE
878	110-54-3	n-Hexane	$1.98x10^{2}$	$2.76x10^{-5}$	$1.76x10^{3}$	2.08	FALSE
878	111-42-2	Diethanolamine	$1.30x10^{4}$	$1.80x10^{-3}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
878	123-31-9	Hydroquinone	$1.13x10^{-2}$	$1.57x10^{-9}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
878	131-11-3	Dimethyl phthalate	$1.20x10^{1}$	$1.67x10^{-6}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
878	584-84-9	Toluene-2,4-diisocyanate	$5.77x10^{3}$	$4.01x10^{-4}$	$3.60x10^{-1}$	$4.25x10^{-4}$	TRUE
878	1330-20-7	Xylene	$8.94x10^{3}$	$1.24x10^{-3}$	$4.34x10^{3}$	5.12	FALSE
878	7439-92-1	Lead	$1.06x10^{4}$	$1.48x10^{-3}$	$5.00x10^{-1}$	$5.90x10^{-4}$	TRUE
878	7439-96-5	Manganese	$2.12x10^{4}$	$2.94x10^{-3}$	2.00	$2.36x10^{-3}$	TRUE
878	7439-97-6	Mercury	$5.44x10^{4}$	$7.56x10^{-3}$	$2.50x10^{-1}$	$2.95x10^{-4}$	TRUE
878	7440-36-0	Antimony	$1.42x10^{3}$	$1.97x10^{-4}$	5.00	$5.90x10^{-3}$	FALSE
878	7440-47-3	Chromium (II) compounds, as chromium	$3.76x10^{4}$	$5.22x10^{-3}$	5.00	$5.90x10^{-3}$	FALSE
878	7440-48-4	Cobalt	$4.04x10^{4}$	$5.61x10^{-3}$	$2.00x10^{-1}$	$2.36x10^{-4}$	TRUE

Table D.1–6. Projected Hazardous Air Pollutant (HAP) Emissions Expanded Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	7647-01-0	Hydrogen chloride	7.23×10^{3}	1.00×10^{-3}	7.00×10^{1}	8.26×10^{-2}	FALSE
878	7664-39-3	Hydrogen fluoride	1.69×10^{4}	2.34×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	7782-49-2	Selenium hexafluoride as selenium	9.07×10^{1}	1.26×10^{-5}	1.60	1.89×10^{-3}	FALSE
878	7784-42-1	Arsine	7.32×10^{3}	1.02×10^{-3}	1.60	1.89×10^{-3}	FALSE
878	7803-51-2	Phosphine	7.32×10^{3}	1.02×10^{-3}	1.40	1.65×10^{-3}	FALSE
893	67-56-1	Methanol	2.28×10^{5}	3.17×10^{-2}	2.60×10^{3}	3.07	FALSE
893	107-21-1	Ethylene glycol	9.80×10^{4}	1.36×10^{-2}	2.60×10^{2}	3.07×10^{-1}	FALSE
893	108-88-3	Toluene	1.96×10^{4}	2.72×10^{-3}	1.88×10^{3}	2.22	FALSE
893	7647-01-0	Hydrogen chloride	4.98×10^{4}	6.91×10^{-3}	7.00×10^{1}	8.26×10^{-2}	FALSE
893	7664-39-3	Hydrogen fluoride	6.58×10^{4}	9.14×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	62-53-3	Aniline	2.55×10^{2}	3.55×10^{-5}	7.60×10^{1}	8.97×10^{-2}	FALSE
897	67-56-1	Methanol	3.16×10^{4}	4.39×10^{-3}	2.60×10^{3}	3.07	FALSE
897	71-55-6	1,1,1-Trichloroethane (methyl chloroform)	1.20×10^{4}	1.67×10^{-3}	1.08×10^{4}	1.28×10^{1}	FALSE
897	74-88-4	Methyl iodide	5.00×10^{2}	6.94×10^{-5}	1.00×10^{2}	1.18×10^{-1}	FALSE
897	75-05-8	Acetonitrile	6.60×10^{3}	9.17×10^{-4}	3.40×10^{2}	4.01×10^{-1}	FALSE
897	106-42-3	p-Xylene	6.86×10^{3}	9.53×10^{-4}	4.34×10^{3}	5.12	FALSE
897	107-21-1	Ethylene glycol	4.40×10^{3}	6.11×10^{-4}	2.60×10^{2}	3.07×10^{-1}	FALSE
897	108-10-1	Methyl isobutyl ketone (hexone)	1.14×10^{1}	1.58×10^{-6}	8.20×10^{2}	9.68×10^{-1}	FALSE
897	108-88-3	Toluene	3.28×10^{3}	4.55×10^{-4}	1.88×10^{3}	2.22	FALSE
897	108-95-2	Phenol	1.00×10^{2}	1.39×10^{-5}	1.90×10^{2}	2.24×10^{-1}	FALSE
897	110-54-3	n-Hexane	1.41×10^{4}	1.96×10^{-3}	1.76×10^{3}	2.08	FALSE
897	123-31-9	Hydroquinone	6.84×10^{2}	9.50×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE

Table D.1–6. Projected Hazardous Air Pollutant (HAP) Emissions Expanded Operations Alternative Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
897	7439-92-1	Lead	5.00	6.94×10^{-7}	5.00×10^{-1}	5.90×10^{-4}	FALSE
897	7647-01-0	Hydrogen chloride	3.19×10^{3}	4.44×10^{-4}	7.00×10^{1}	8.26×10^{-2}	FALSE
897	7664-39-3	Hydrogen fluoride	1.64×10^{3}	2.27×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
905	67-56-1	Methanol	1.02×10^{4}	1.42×10^{-3}	2.60×10^{3}	3.07	FALSE
905	75-05-8	Acetonitrile	2.52×10^{4}	3.49×10^{-3}	3.40×10^{2}	4.01×10^{-1}	FALSE
905	108-88-3	Toluene	1.38×10^{3}	1.92×10^{-4}	1.88×10^{3}	2.22	FALSE
981	67-56-1	Methanol	4.66×10^{4}	6.48×10^{-3}	2.60×10^{3}	3.07	FALSE

Table D.1–7. Projected Hazardous Air Pollutant (HAP) Emissions Reduced Operations Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
605	67-56-1	Methanol	1.89×10^{3}	2.63×10^{-4}	2.60×10^{3}	3.07	FALSE
6580	7647-01-0	Hydrogen chloride	1.09×10^{3}	1.52×10^{-4}	7.00×10^{1}	8.26×10^{-2}	FALSE
858	67-56-1	Methanol	5.62×10^{4}	7.80×10^{-3}	2.60×10^{3}	3.07	FALSE
858	78-93-3	Methyl ethyl ketone (2-butanone)	5.39×10^{2}	7.49×10^{-5}	5.90×10^{3}	6.97	FALSE
858	110-54-3	n-Hexane	9.38×10^{2}	1.30×10^{-4}	1.76×10^{3}	2.08	FALSE
858	7647-01-0	Hydrogen chloride	4.41×10^{4}	6.12×10^{-3}	7.00×10^{1}	8.26×10^{-2}	FALSE
858	7664-39-3	Hydrogen fluoride	3.80×10^{4}	5.27×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
870	101-77-9	4,4-Methylene dianiline (37%)	1.68×10^{5}	2.33×10^{-2}	8.10	9.56×10^{-3}	TRUE
870	67-56-1	Alcohol, Methyl	1.66×10^{6}	2.31×10^{-1}	2.60×10^{3}	3.07	FALSE
870	7440-47-3	Chromium	1.51×10^{4}	2.10×10^{-3}	5	5.90×10^{-3}	FALSE
870	1333-82-0	Chromium Trioxide	8.98×10^{3}	1.25×10^{-3}	1.00×10^{-2}	1.18×10^{-5}	TRUE
870	7440-48-4	Cobalt (17.4%)	1.04×10^{4}	1.45×10^{-3}	2.00×10^{-1}	2.36×10^{-4}	TRUE
870	111-42-2	Diethanolamine (85%)	3.05×10^{5}	4.24×10^{-2}	2.00×10^{1}	2.36×10^{-2}	TRUE
870	107-21-1	Ethylene Glycol	2.23×10^{4}	3.10×10^{-3}	2.60×10^{2}	3.07×10^{-1}	FALSE
870	7647-01-0	Hydrochloric Acid	1.19×10^{5}	1.65×10^{-2}	7.00×10^{1}	8.26×10^{-2}	FALSE
870	7664-39-3	Hydrofluoric Acid	9.86×10^{4}	1.37×10^{-2}	2.00×10^{1}	2.36×10^{-2}	FALSE
870	7439-96-5	Manganese	1.31×10^{4}	1.82×10^{-3}	2	2.36×10^{-3}	FALSE
870	108-10-1	Methyl iso-butyl ketone	6.84×10^{4}	9.50×10^{-3}	8.20×10^{2}	9.68×10^{-1}	FALSE
870	7718-54-9	Nickel Chloride	7.98×10^{5}	1.11×10^{-1}	1.50×10^{-1}	1.77×10^{-4}	TRUE
870	7786-81-4	Nickel Sulfate	7.98×10^{5}	1.11×10^{-1}	1.50×10^{-1}	1.77×10^{-4}	FALSE
878	67-56-1	Methanol	5.84×10^{4}	8.12×10^{-3}	2.60×10^{3}	3.07	FALSE
878	68-12-2	N,N-Dimethylformamide	3.27×10^{1}	4.54×10^{-6}	3.00×10^{2}	3.54×10^{-1}	FALSE

Table D.1–7. Projected Hazardous Air Pollutant (HAP) Emissions Reduced Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	71-55-6	1,1,1-Trichloroethane (methyl chloroform)	7.78×10^{4}	1.08×10^{-2}	1.08×10^{4}	1.28×10^{1}	FALSE
878	78-93-3	Methyl ethyl ketone (2-butanone)	3.40×10^{3}	4.72×10^{-4}	5.90×10^{3}	6.97	FALSE
878	79-10-7	Acrylic acid	2.06×10^{2}	2.86×10^{-5}	5.90×10^{1}	6.97×10^{-2}	FALSE
878	80-62-6	Methyl methacrylate	1.12×10^{2}	1.56×10^{-5}	2.10×10^{3}	2.48	FALSE
878	84-74-2	Dibutyl phthalate	3.00	4.17×10^{-7}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	101-68-8	Methylenebis(phenylisocyanate) (MDI)	9.92×10^{1}	1.38×10^{-5}	5.00×10^{-1}	5.90×10^{-4}	FALSE
878	107-21-1	Ethylene glycol	3.29×10^{3}	4.58×10^{-4}	2.60×10^{2}	3.07×10^{-1}	FALSE
878	108-10-1	Methyl isobutyl ketone (hexone)	4.68	6.50×10^{-7}	8.20×10^{2}	9.68×10^{-1}	FALSE
878	108-88-3	Toluene	9.70×10^{3}	1.35×10^{-3}	1.88×10^{3}	2.22	FALSE
878	108-95-2	Phenol	6.06×10^{3}	8.42×10^{-4}	1.90×10^{2}	2.24×10^{-1}	FALSE
878	110-54-3	n-Hexane	9.92×10^{1}	1.38×10^{-5}	1.76×10^{3}	2.08	FALSE
878	111-42-2	Diethanolamine	6.49×10^{3}	9.01×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	123-31-9	Hydroquinone	5.64×10^{-3}	7.83×10^{-10}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	131-11-3	Dimethyl phthalate	6.00	8.33×10^{-7}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	584-84-9	Toluene-2,4-diisocyanate	2.89×10^{3}	4.01×10^{-4}	3.60×10^{-1}	4.25×10^{-4}	FALSE
878	1330-20-7	Xylene	4.47×10^{3}	6.21×10^{-4}	4.34×10^{3}	5.12	FALSE
878	7439-92-1	Lead	5.32×10^{3}	7.38×10^{-4}	5.00×10^{-1}	5.90×10^{-4}	TRUE
878	7439-96-5	Manganese	1.06×10^{4}	1.47×10^{-3}	2.00	2.36×10^{-3}	FALSE
878	7439-97-6	Mercury	2.72×10^{4}	3.78×10^{-3}	2.50×10^{-1}	2.95×10^{-4}	TRUE
878	7440-36-0	Antimony	7.09×10^{2}	9.84×10^{-5}	5.00	5.90×10^{-3}	FALSE
878	7440-47-3	Chromium (II) compounds, as chromium	1.88×10^{4}	2.61×10^{-3}	5.00	5.90×10^{-3}	FALSE
878	7440-48-4	Cobalt	2.02×10^{4}	2.80×10^{-3}	2.00×10^{-1}	2.36×10^{-4}	TRUE

Table D.1–7. Projected Hazardous Air Pollutant (HAP) Emissions Reduced Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	7647-01-0	Hydrogen chloride	3.62×10^{3}	5.02×10^{-4}	7.00×10^{1}	8.26×10^{-2}	FALSE
878	7664-39-3	Hydrogen fluoride	8.43×10^{3}	1.17×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	7782-49-2	Selenium hexafluoride as selenium	4.54×10^{1}	6.30×10^{-6}	1.60	1.89×10^{-3}	FALSE
878	7784-42-1	Arsine	3.66×10^{3}	5.08×10^{-4}	1.60	1.89×10^{-3}	FALSE
878	7803-51-2	Phosphine	3.66×10^{3}	5.08×10^{-4}	1.40	1.65×10^{-3}	FALSE
893	67-56-1	Methanol	1.14×10^{5}	1.58×10^{-2}	2.60×10^{3}	3.07	FALSE
893	107-21-1	Ethylene glycol	4.90×10^{4}	6.81×10^{-3}	2.60×10^{2}	3.07×10^{-1}	FALSE
893	108-88-3	Toluene	9.80×10^{3}	1.36×10^{-3}	1.88×10^{3}	2.22	FALSE
893	7647-01-0	Hydrogen chloride	2.49×10^{4}	3.46×10^{-3}	7.00×10^{1}	8.26×10^{-2}	FALSE
893	7664-39-3	Hydrogen fluoride	3.29×10^{4}	4.57×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	62-53-3	Aniline	2.35×10^{2}	3.26×10^{-5}	7.60×10^{1}	8.97×10^{-2}	FALSE
897	67-56-1	Methanol	2.91×10^{4}	4.04×10^{-3}	2.60×10^{3}	3.07	FALSE
897	71-55-6	1,1,1-Trichloroethane (methyl chloroform)	1.11×10^{4}	1.54×10^{-3}	1.08×10^{4}	1.28×10^{1}	FALSE
897	74-88-4	Methyl iodide	4.60×10^{2}	6.39×10^{-5}	1.00×10^{2}	1.18×10^{-1}	FALSE
897	75-05-8	Acetonitrile	6.07×10^{3}	8.44×10^{-4}	3.40×10^{2}	4.01×10^{-1}	FALSE
897	106-42-3	p-Xylene	6.31×10^{3}	8.76×10^{-4}	4.34×10^{3}	5.12	FALSE
897	107-21-1	Ethylene glycol	4.05×10^{3}	5.62×10^{-4}	2.60×10^{2}	3.07×10^{-1}	FALSE
897	108-10-1	Methyl isobutyl ketone (hexone)	1.05×10^{1}	1.46×10^{-6}	8.20×10^{2}	9.68×10^{-1}	FALSE
897	108-88-3	Toluene	3.02×10^{3}	4.19×10^{-4}	1.88×10^{3}	2.22	FALSE
897	108-95-2	Phenol	9.20×10^{1}	1.28×10^{-5}	1.90×10^{2}	2.24×10^{-1}	FALSE
897	110-54-3	n-Hexane	1.30×10^{4}	1.80×10^{-3}	1.76×10^{3}	2.08	FALSE
897	123-31-9	Hydroquinone	6.29×10^{2}	8.74×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE

Table D.1–7. Projected Hazardous Air Pollutant (HAP) Emissions Reduced Operations Alternative Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
897	7439-92-1	Lead	4.60	6.39×10^{-7}	5.00×10^{-1}	5.90×10^{-4}	FALSE
897	7647-01-0	Hydrogen chloride	2.94×10^{3}	4.08×10^{-4}	7.00×10^{1}	8.26×10^{-2}	FALSE
897	7664-39-3	Hydrogen fluoride	1.51×10^{3}	2.09×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
905	67-56-1	Methanol	1.02×10^{3}	1.42×10^{-4}	2.60×10^{3}	3.07	FALSE
905	75-05-8	Acetonitrile	2.52×10^{3}	3.49×10^{-4}	3.40×10^{2}	4.01×10^{-1}	FALSE
905	108-88-3	Toluene	1.38×10^{2}	1.92×10^{-5}	1.88×10^{3}	2.22	FALSE
981	67-56-1	Methanol	4.24×10^{3}	5.89×10^{-4}	2.60×10^{3}	3.07	FALSE

Table D.1–8. 1996 Annual Purchases of Toxic Air Pollutants (TAPs) Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
605	79-09-4	Propionic acid	1.03×10^{2}	1.43×10^{-5}	3.00×10^{2}	3.54×10^{-1}	FALSE
605	7664-93-9	Sulfuric acid	8.25×10^{1}	1.15×10^{-5}	1.00×10^{1}	1.18×10^{-2}	FALSE
6580	141-78-6	Ethyl acetate	3.60×10^{3}	5.00×10^{-4}	1.40×10^{4}	1.65×10^{1}	FALSE
6580	7722-84-1	Hydrogen peroxide (concentration > 52%)	1.66×10^{2}	2.31×10^{-5}	1.40×10^{1}	1.65×10^{-2}	FALSE
6580	7697-37-2	Nitric acid	2.62×10^{3}	3.65×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
6580	1310-73-2	Sodium hydroxide	1.13×10^{4}	1.57×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
6580	7664-93-9	Sulfuric acid	9.20×10^{2}	1.28×10^{-4}	1.00×10^{1}	1.18×10^{-2}	FALSE
6920	7697-37-2	Nitric acid	1.87×10^{2}	2.60×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
6920	1310-73-2	Sodium hydroxide	4.54×10^{2}	6.30×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE
6920	7440-66-6	Zinc	1.00×10^{3}	1.39×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
858	64-19-7	Acetic acid	3.22×10^{4}	4.48×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
858	67-64-1	Acetone	1.74×10^{4}	2.41×10^{-3}	5.90×10^{3}	6.97	FALSE
858	7722-84-1	Hydrogen peroxide (concentration > 52%)	1.77×10^{6}	2.46×10^{-1}	1.40×10^{1}	1.65×10^{-2}	TRUE
858	7697-37-2	Nitric acid	2.28×10^{6}	3.16×10^{-1}	5.00×10^{1}	5.90×10^{-2}	TRUE
858	7664-38-2	Phosphoric acid	4.34×10^{4}	6.02×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
858	7803-62-5	Silane (silicon tetrahydride)	1.02×10^{5}	1.41×10^{-2}	6.60×10^{1}	7.79×10^{-2}	FALSE
858	1310-73-2	Sodium hydroxide	3.50×10^{7}	4.86	2.00×10^{1}	2.36×10^{-2}	TRUE
858	7664-93-9	Sulfuric acid	3.30×10^{4}	4.59×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
870	64-19-7	Acetic Acid	3.45×10^{4}	4.79×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
870	64-19-7	Acetic Acid, Glacial	3.86×10^{4}	5.35×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
870	67-64-1	Acetone	2.15×10^{6}	2.99×10^{-1}	5.90×10^{3}	6.97	FALSE
870	71-36-3	Alcohol, Butyl	4.08×10^{3}	5.67×10^{-4}	3.00×10^{3}	3.54	FALSE

Table D.1–8. 1996 Annual Purchases of Toxic Air Pollutants (TAPs) Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
870	67-63-0	Alcohol, Isopropyl	7.85×10^{4}	1.09×10^{-2}	4.90×10^{3}	5.79	FALSE
870	7429-90-5	Aluminum	2.00×10^{5}	2.77×10^{-2}	50	5.90×10^{-2}	FALSE
870	1344-28-1	Aluminum Oxide	9.98×10^{4}	1.39×10^{-2}	5.00×10^{1}	5.90×10^{-2}	FALSE
870	1336-21-6	Ammonium Hydroxide	4.54×10^{3}	6.30×10^{-4}	No OEL		
870	1113-50-1	Boric Acid	3.99×10^{4}	5.54×10^{-3}	No OEL		
870		Brulin Cleaner	0	0	0	0	FALSE
870	11-15-9	Cellosolve Acetate	1.81×10^{3}	2.52×10^{-4}	No OEL		
870		Cerric Ammonium Nitrate	5.99×10^{5}	8.32×10^{-2}	No OEL		
870		Citridet Cleaner	3.82×10^{5}	5.31×10^{-2}	1.21×10^{3}	1.43	FALSE
870	7440-50-8	Copper	2.00×10^{5}	2.77×10^{-2}	1.00	1.18×10^{-3}	TRUE
870	7440-50-8	Copper (0.10%)	1.81×10^{1}	2.52×10^{-6}	1.00	1.18×10^{-3}	FALSE
870		Carboxyl terminated acrylonitrile butadiene Epoxy Resin	9.98×10^{4}	1.39×10^{-2}	No OEL		
870		Curing Agent Z (37% methylene dianiline)	1.51×10^{5}	2.09×10^{-2}	No OEL		
870		2,6-diethylaniline curing agent	1.20×10^{5}	1.66×10^{-2}	No OEL		
870		Diala oil	1.67×10^{5}	2.32×10^{-2}	No OEL		
870	106-42-3	Di-p Xylene	2.73×10^{5}	3.79×10^{-2}	4.34×10^{3}	5.12	FALSE
870	7440-52-0	Erbium	4.99×10^{3}	6.93×10^{-4}	No OEL		
870		Fluorinert	1.87×10^{6}	2.59×10^{-1}	No OEL		
870		Glass microballoons filler	2.49×10^{4}	3.46×10^{-3}	No OEL		
870		Hexylene glycol	3.33×10^{5}	4.63×10^{-2}	1.21×10^{3}	1.43	FALSE
870	1309-37-1	Iron (53%)	1.04×10^{4}	1.45×10^{-3}	50	5.90×10^{-2}	FALSE

Table D.1–8. 1996 Annual Purchases of Toxic Air Pollutants (TAPs) Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
870	123-92-2	Iso Amyl Acetate	2.65×10^{5}	3.68×10^{-2}	5.25×10^{3}	6.20	FALSE
870		Isopropyl alcohol	7.85×10^{4}	1.09×10^{-2}	4.90×10^{3}	5.79	FALSE
870		Mold Release	9.34×10^{4}	1.30×10^{-2}	No OEL		
870	7439-98-7	Molybdenum	1.81×10^{3}	2.52×10^{-4}	50	5.90×10^{-2}	FALSE
870	7697-37-2	Nitric Acid (70%)	4.84×10^{4}	6.72×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
870		Oakite Citridet	3.33×10^{5}	4.63×10^{-2}	No OEL		
870	127-18-4	Perchloroethylene	1.01×10^{6}	1.41×10^{-1}	1.70×10^{3}	2.01	FALSE
870	7664-38-2	Phosphoric Acid	3.67×10^{4}	5.10×10^{-3}	10	1.18×10^{-2}	FALSE
870	1310-58-3	Potassium Hydroxide	4.99×10^{3}	6.93×10^{-4}	20	2.36×10^{-2}	FALSE
870	7440-20-2	Scandium	4.99×10^{3}	6.93×10^{-4}	No OEL		
870	7631-86-9	Silica	2.71×10^{5}	3.77×10^{-2}	4.00×10^{1}	4.72×10^{-2}	FALSE
870		Silver Epoxy	4.99×10^{3}	6.93×10^{-4}	No OEL		
870	1310-73-2	Sodium Hydroxide	4.99×10^{3}	6.93×10^{-4}	20	2.36×10^{-2}	FALSE
870	7664-93-9	Sulfuric Acid	3.67×10^{4}	5.10×10^{-3}	10	1.18×10^{-2}	FALSE
870	7704-98-5	Titanium Hydride	9.07×10^{2}	1.26×10^{-4}	No OEL		
870		Ultima Gold-Packard (alkylnapthalene)	5.27×10^{5}	7.32×10^{-2}	No OEL		
878	110-80-5	2-Ethoxyethanol	1.24×10^{2}	1.73×10^{-5}	1.80×10^{1}	2.13×10^{-2}	FALSE
878	111-15-9	2-Ethoxyethyl acetate	8.53×10^{3}	1.18×10^{-3}	2.70×10^{1}	3.19×10^{-2}	FALSE
878	109-86-4	2-Methoxyethanol	8.75×10^{1}	1.22×10^{-5}	3.00	3.54×10^{-3}	FALSE
878	64-19-7	Acetic acid	1.28×10^{4}	1.77×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
878	67-64-1	Acetone	3.92×10^{5}	5.44×10^{-2}	5.90×10^{3}	6.97	FALSE
878	7429-90-5	Aluminum (fume or dust)	1.07×10^{4}	1.48×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE

Table D.1–8. 1996 Annual Purchases of Toxic Air Pollutants (TAPs) Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	1344-28-1	Aluminum oxide (fibrous forms)	$1.67x10^{6}$	$2.31x10^{-1}$	$5.00x10^{1}$	$5.90x10^{-2}$	TRUE
878	12125-02-9	Ammonium chloride	$9.99x10^{4}$	$1.39x10^{-2}$	$1.00x10^{2}$	$1.18x10^{-1}$	FALSE
878	1303-96-4	Borates, tetra, sodium salts (anhydrous)	$1.00x10^{4}$	$1.39x10^{-3}$	$1.00x10^{1}$	$1.18x10^{-2}$	FALSE
878	111-76-2	Butyl cellosolve (R)	$5.97x10^{3}$	$8.29x10^{-4}$	$2.40x10^{2}$	$2.83x10^{-1}$	FALSE
878	1305-62-0	Calcium hydroxide	$1.12x10^{4}$	$1.56x10^{-3}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
878	76-22-2	Camphor	$7.44x10^{1}$	$1.03x10^{-5}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
878	1333-86-4	Carbon black	$4.46x10^{2}$	$6.19x10^{-5}$	$3.50x10^{1}$	$4.13x10^{-2}$	FALSE
878	2921-88-2	Chlorpyrifos	2.27	$3.15x10^{-7}$	2.00	$2.36x10^{-3}$	FALSE
878	7440-50-8	Copper dusts and mists, as copper	$7.60x10^{4}$	$1.06x10^{-2}$	$1.00x10^{1}$	$1.18x10^{-2}$	FALSE
878	110-82-7	Cyclohexane	$3.40x10^{2}$	$4.73x10^{-5}$	$7.00x10^{3}$	8.26	FALSE
878	108-93-0	Cyclohexanol	8.00	$1.11x10^{-6}$	$2.00x10^{3}$	2.36	FALSE
878	108-91-8	Cyclohexylamine	$1.83x10^{4}$	$2.54x10^{-3}$	$4.00x10^{2}$	$4.72x10^{-1}$	FALSE
878	111-40-0	Diethylene triamine	$2.07x10^{3}$	$2.87x10^{-4}$	$4.00x10^{1}$	$4.72x10^{-2}$	FALSE
878	109-87-5	Dimethyoxymethane (methylal)	3.40	$4.72x10^{-7}$	$3.10x10^{4}$	$3.66x10^{1}$	FALSE
878	141-43-5	Ethanolamine	$1.53x10^{2}$	$2.12x10^{-5}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
878	141-78-6	Ethyl acetate	$4.88x10^{2}$	$6.77x10^{-5}$	$1.40x10^{4}$	$1.65x10^{1}$	FALSE
878	78-10-4	Ethyl silicate	$4.79x10^{2}$	$6.65x10^{-5}$	$8.50x10^{2}$	1.00	FALSE
878	64-18-6	Formic acid	$5.68x10^{3}$	$7.89x10^{-4}$	$9.00x10^{1}$	$1.06x10^{-1}$	FALSE
878	7722-84-1	Hydrogen peroxide (concentration > 52%)	$2.94x10^{4}$	$4.08x10^{-3}$	$1.40x10^{1}$	$1.65x10^{-2}$	FALSE
878	7783-06-4	Hydrogen sulfide	$3.66x10^{3}$	$5.08x10^{-4}$	$1.40x10^{2}$	$1.65x10^{-1}$	FALSE
878	61788-32-7	Hydrogenated terphenyls	$3.18x10^{3}$	$4.42x10^{-4}$	$4.90x10^{1}$	$5.79x10^{-2}$	FALSE
878	7440-74-6	Indium & compounds as indium	$8.80x10^{3}$	$1.22x10^{-3}$	1.00	$1.18x10^{-3}$	TRUE

Table D.1–8. 1996 Annual Purchases of Toxic Air Pollutants (TAPs) Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	7553-56-2	Iodine	7.00×10^{2}	9.72×10^{-5}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	1309-37-1	Iron oxide fume (Fe_2O_3) as iron	1.03×10^{4}	1.43×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	7439-89-6	Iron salts, soluble, as iron	8.03×10^{3}	1.12×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	26952-21-6	Isoacytl alcohol	6.80	9.45×10^{-7}	2.66×10^{3}	3.14	FALSE
878	110-19-0	Isobutyl acetate	5.10×10^{1}	7.08×10^{-6}	7.00×10^{3}	8.26	FALSE
878	4098-71-9	Isophorone diisocyanate	1.00	1.39×10^{-7}	4.50×10^{-1}	5.31×10^{-4}	FALSE
878	67-63-0	Isopropyl alcohol	2.21×10^{5}	3.07×10^{-2}	4.90×10^{3}	5.79	FALSE
878	1309-48-4	Magnesium oxide	1.18×10^{3}	1.63×10^{-4}	6.00×10^{1}	7.08×10^{-2}	FALSE
878	5124-30-1	Methylene bis(4-cyclohexylisocyanate)	1.66×10^{2}	2.31×10^{-5}	5.40×10^{-1}	6.38×10^{-4}	FALSE
878	7439-98-7	Molybdenum as Molybdenum (insoluble compounds)	1.57×10^{4}	2.18×10^{-3}	1.00×10^{2}	1.18×10^{-1}	FALSE
878	628-63-7	n-Amyl acetate	4.38×10^{2}	6.08×10^{-5}	2.60×10^{3}	3.07	FALSE
878	123-86-4	n-Butyl acetate	1.36×10^{3}	1.89×10^{-4}	7.10×10^{3}	8.38	FALSE
878	71-36-3	n-Butyl alcohol	6.74×10^{3}	9.36×10^{-4}	3.00×10^{3}	3.54	FALSE
878	2426-08-6	n-Butyl glycidyl ether (BGE)	2.72×10^{2}	3.78×10^{-5}	1.33×10^{3}	1.57	FALSE
878	142-82-5	n-Heptane	6.03×10^{2}	8.37×10^{-5}	3.50×10^{3}	4.13	FALSE
878	7697-37-2	Nitric acid	6.33×10^{4}	8.79×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	109-66-0	Pentane	3.25×10^{2}	4.51×10^{-5}	3.50×10^{3}	4.13	FALSE
878	8002-05-9	Petroleum	4.53×10^{2}	6.30×10^{-5}	3.50×10^{3}	4.13	FALSE
878	9003-53-6	Phenylethylene (styrene, monomer)	1.05×10^{2}	1.46×10^{-5}	8.50×10^{2}	1.00	FALSE
878	7664-38-2	Phosphoric acid	6.69×10^{3}	9.30×10^{-4}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	7440-06-4	Platinum metal	1.02×10^{4}	1.41×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	1310-58-3	Potassium hydroxide	2.90×10^{3}	4.03×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE

Table D.1–8. 1996 Annual Purchases of Toxic Air Pollutants (TAPs) Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	71-23-8	Propyl alcohol	4.06×10^{3}	5.63×10^{-4}	4.92×10^{3}	5.81	FALSE
878	8003-34-7	Pyrethrins	2.36×10^{-1}	3.28×10^{-8}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	110-86-1	Pyridine	1.94×10^{2}	2.69×10^{-5}	1.50×10^{2}	1.77×10^{-1}	FALSE
878	14808-60-7	Quartz	4.02×10^{3}	5.59×10^{-4}	5.00×10^{-1}	5.90×10^{-4}	FALSE
878	78-92-2	sec-Butyl alcohol	1.34×10^{3}	1.86×10^{-4}	3.00×10^{3}	3.54	FALSE
878	7631-86-9	Silica, fused (respirable)	6.46×10^{3}	8.97×10^{-4}	5.00×10^{-1}	5.90×10^{-4}	TRUE
878	7440-22-4	Silver metal	1.40×10^{4}	1.95×10^{-3}	1.00×10^{-1}	1.18×10^{-4}	TRUE
878	7631-90-5	Sodium bisulfite	5.00×10^{2}	6.94×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	1310-73-2	Sodium hydroxide	4.87×10^{2}	6.77×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	8052-41-3	Stoddard solvent	2.27×10^{2}	3.15×10^{-5}	3.50×10^{3}	4.13	FALSE
878	7664-93-9	Sulfuric acid	2.18×10^{2}	3.02×10^{-5}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	75-65-0	t-Butyl alcohol	3.40	4.72×10^{-7}	3.00×10^{3}	3.54	FALSE
878	7440-25-7	Tantalum	1.04×10^{3}	1.44×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	26140-60-3	Terphenyls	4.77×10^{2}	6.62×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	109-99-9	Tetrahydrofuran	4.23×10^{2}	5.87×10^{-5}	1.50×10^{3}	1.77	FALSE
878	7722-88-5	Tetrasodium pyrophosphate	1.50	2.08×10^{-7}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	7440-31-5	Tin metal	1.37×10^{4}	1.91×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	91-08-7	Toluene-2,6-diisocyanate	2.04×10^{1}	2.83×10^{-6}	7.00×10^{-1}	8.26×10^{-4}	FALSE
878	7440-33-7	Tungsten as Wolfram insoluble compounds	2.74×10^{4}	3.81×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	7440-62-2	Vanadium (fume or dust)	2.18×10^{4}	3.03×10^{-3}	5.00×10^{-1}	5.90×10^{-4}	TRUE
878	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	2.75×10^{-1}	3.82×10^{-8}	3.50×10^{3}	4.13	FALSE
878	7440-66-6	Zinc	9.64	1.34×10^{-6}	5.00×10^{1}	5.90×10^{-2}	FALSE

Table D.1–8. 1996 Annual Purchases of Toxic Air Pollutants (TAPs) Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	1314-13-2	Zinc oxide	1.14×10^{2}	1.58×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
893	67-64-1	Acetone	4.68×10^{5}	6.50×10^{-2}	5.90×10^{3}	6.97	FALSE
893	7726-95-6	Bromine	1.55×10^{2}	2.16×10^{-5}	6.60	7.79×10^{-3}	FALSE
893	7722-84-1	Hydrogen peroxide (Conc.> 52%)	1.30×10^{4}	1.80×10^{-3}	1.40×10^{1}	1.65×10^{-2}	FALSE
893	67-63-0	Isopropyl alcohol	1.77×10^{5}	2.46×10^{-2}	4.90×10^{3}	5.79	FALSE
893	7697-37-2	Nitric acid	1.36×10^{4}	1.89×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
893	1310-58-3	Potassium hydroxide	2.04×10^{3}	2.84×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
893	7664-93-9	Sulfuric acid	7.07×10^{4}	9.82×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
893	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	2.40×10^{3}	3.33×10^{-4}	3.50×10^{3}	4.13	FALSE
897	64-19-7	Acetic acid	4.95×10^{4}	6.88×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
897	67-64-1	Acetone	6.84×10^{4}	9.51×10^{-3}	5.90×10^{3}	6.97	FALSE
897	106-92-3	Allyl glycidyl ether	1.67×10^{1}	2.32×10^{-6}	2.20×10^{2}	2.60×10^{-1}	FALSE
897	1344-28-1	Aluminum oxide (fibrous forms)	1.50×10^{3}	2.08×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
897	128-37-0	Butylated hydroxytoluene	9.90×10^{1}	1.37×10^{-5}	1.00×10^{2}	1.18×10^{-1}	FALSE
897	420-04-2	Cyanamide	2.47×10^{1}	3.44×10^{-6}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	110-82-7	Cyclohexane	2.99	4.15×10^{-7}	7.00×10^{3}	8.26	FALSE
897	107-66-4	Dibutyl phosphate	2.72×10^{2}	3.78×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
897	124-40-3	Dimethylamine	3.98×10^{2}	5.53×10^{-5}	4.00×10^{1}	4.72×10^{-2}	FALSE
897	141-78-6	Ethyl acetate	1.78×10^{4}	2.47×10^{-3}	1.40×10^{4}	1.65×10^{1}	FALSE
897	60-29-7	Ethyl ether (diethyl ether)	2.18×10^{4}	3.03×10^{-3}	1.20×10^{4}	1.42×10^{1}	FALSE
897	78-10-4	Ethyl silicate	6.27×10^{2}	8.72×10^{-5}	8.50×10^{2}	1.00	FALSE
897	7722-84-1	Hydrogen peroxide (concentration > 52%)	2.36×10^{3}	3.28×10^{-4}	1.40×10^{1}	1.65×10^{-2}	FALSE

Table D.1–8. 1996 Annual Purchases of Toxic Air Pollutants (TAPs) Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
897	67-63-0	Isopropyl alcohol	$7.77x10^{4}$	$1.08x10^{-2}$	$4.90x10^{3}$	5.79	FALSE
897	8008-20-6	Kerosene	$3.01x10^{3}$	$4.18x10^{-4}$	$1.00x10^{3}$	1.18	FALSE
897	126-98-7	Methacrylonitrile	$7.95x10^{1}$	$1.10x10^{-5}$	$2.70x10^{1}$	$3.19x10^{-2}$	FALSE
897	681-84-5	Methyl silicate	$2.24x10^{2}$	$3.12x10^{-5}$	$6.00x10^{1}$	$7.08x10^{-2}$	FALSE
897	71-36-3	n-Butyl alcohol	$1.57x10^{2}$	$2.19x10^{-5}$	$3.00x10^{3}$	3.54	FALSE
897	142-82-5	n-Heptane	$5.42x10^{3}$	$7.52x10^{-4}$	$3.50x10^{3}$	4.13	FALSE
897	7697-37-2	Nitric acid	$1.60x10^{1}$	$2.22x10^{-6}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
897	144-62-7	Oxalic acid	$3.92x10^{3}$	$5.44x10^{-4}$	$1.00x10^{1}$	$1.18x10^{-2}$	FALSE
897	109-66-0	Pentane	$1.91x10^{3}$	$2.66x10^{-4}$	$3.50x10^{3}$	4.13	FALSE
897	9003-53-6	Phenlylethylene (Styrene, monomer)	$8.00x10^{-1}$	$1.11x10^{-7}$	$8.50x10^{2}$	1.00	FALSE
897	88-89-1	Picric acid (2,4,6-Trinitrophenol)	9.95	$1.38x10^{-6}$	1.00	$1.18x10^{-3}$	FALSE
897	1310-58-3	Potassium hydroxide	$9.30x10^{3}$	$1.29x10^{-3}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
897	71-23-8	Propyl alcohol	$2.98x10^{4}$	$4.14x10^{-3}$	$4.92x10^{3}$	5.81	FALSE
897	7440-22-4	Silver Metal	$1.68x10^{1}$	$2.33x10^{-6}$	$1.00x10^{-1}$	$1.18x10^{-4}$	FALSE
897	1310-73-2	Sodium hydroxide	$5.00x10^{2}$	$6.94x10^{-5}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
897	7664-93-9	Sulfuric acid	$7.75x10^{3}$	$1.08x10^{-3}$	$1.00x10^{1}$	$1.18x10^{-2}$	FALSE
897	109-99-9	Tetrahydrofuran	$1.17x10^{4}$	$1.62x10^{-3}$	$1.50x10^{3}$	1.77	FALSE
897	7719-09-7	Thionyl chloride	$4.89x10^{3}$	$6.80x10^{-4}$	$4.90x10^{1}$	$5.79x10^{-2}$	FALSE
897	76-03-9	Trichloroacetic acid	$5.00x10^{2}$	$6.94x10^{-5}$	$6.70x10^{1}$	$7.91x10^{-2}$	FALSE
905	67-64-1	Acetone	$1.40x10^{4}$	$1.95x10^{-3}$	$5.90x10^{3}$	6.97	FALSE
905	67-63-0	Isopropyl alcohol	$1.24x10^{4}$	$1.72x10^{-3}$	$4.90x10^{3}$	5.79	FALSE
905	1309-48-4	Magnesium oxide	$8.00x10^{2}$	$1.11x10^{-4}$	$6.00x10^{1}$	$7.08x10^{-2}$	FALSE

Table D.1–8. 1996 Annual Purchases of Toxic Air Pollutants (TAPs) Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
905	109-99-9	Tetrahydrofuran	3.34×10^{3}	4.64×10^{-4}	1.50×10^{3}	1.77	FALSE
963	67-63-0	Isopropyl alcohol	7.85×10^{2}	1.09×10^{-4}	4.90×10^{3}	5.79	FALSE
981	67-64-1	Acetone	2.99×10^{3}	4.15×10^{-4}	5.90×10^{3}	6.97	FALSE
981	7664-93-9	Sulfuric acid	4.69×10^{4}	6.52×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
986	67-64-1	Acetone	2.99×10^{3}	4.15×10^{-4}	5.90×10^{3}	6.97	FALSE

[a] No CAS number is available

Table D.1–9. Projected Toxic Air Pollutant (TAP) Emissions No Action Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
605	79-09-4	Propionic acid	1.03×10^{2}	1.43×10^{-5}	3.00×10^{2}	3.54×10^{-1}	FALSE
605	7664-93-9	Sulfuric acid	8.25×10^{1}	1.15×10^{-5}	1.00×10^{1}	1.18×10^{-2}	FALSE
6580	141-78-6	Ethyl acetate	7.20×10^{3}	1.00×10^{-3}	1.40×10^{4}	1.65×10^{1}	FALSE
6580	7722-84-1	Hydrogen peroxide (concentration> 52%)	4.99×10^{2}	6.94×10^{-5}	1.40×10^{1}	1.65×10^{-2}	FALSE
6580	7697-37-2	Nitric acid	1.57×10^{4}	2.19×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
6580	1310-73-2	Sodium hydroxide	1.13×10^{4}	1.57×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
6580	7664-93-9	Sulfuric acid	9.20×10^{3}	1.28×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
6920	7697-37-2	Nitric acid	1.87×10^{2}	2.60×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
6920	1310-73-2	Sodium hydroxide	4.54×10^{2}	6.30×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE
6920	7440-66-6	Zinc	1.00×10^{3}	1.39×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
858	64-19-7	Acetic acid	5.64×10^{4}	7.83×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
858	67-64-1	Acetone	3.04×10^{4}	4.22×10^{-3}	5.90×10^{3}	6.97	FALSE
858	7722-84-1	Hydrogen peroxide (concentration> 52%)	3.10×10^{6}	4.31×10^{-1}	1.40×10^{1}	1.65×10^{-2}	TRUE
858	7697-37-2	Nitric acid	3.99×10^{6}	5.54×10^{-1}	5.00×10^{1}	5.90×10^{-2}	TRUE
858	7664-38-2	Phosphoric acid	7.59×10^{4}	1.05×10^{-2}	1.00×10^{1}	1.18×10^{-2}	FALSE
858	7803-62-5	Silane (silicon tetrahydride)	1.78×10^{5}	2.47×10^{-2}	6.60×10^{1}	7.79×10^{-2}	FALSE
858	1310-73-2	Sodium hydroxide	6.12×10^{7}	8.50	2.00×10^{1}	2.36×10^{-2}	TRUE
858	7664-93-9	Sulfuric acid	5.78×10^{4}	8.02×10^{3}	1.00×10^{1}	1.18×10^{-2}	FALSE
870	64-19-7	Acetic Acid	1.05×10^{5}	1.45×10^{-2}	2.50×10^{2}	2.95×10^{-1}	FALSE
870	64-19-7	Acetic Acid, Glacial	1.15×10^{5}	1.60×10^{-2}	2.50×10^{2}	2.95×10^{-1}	FALSE
870	67-64-1	Acetone	6.46×10^{6}	8.97×10^{-1}	5.90×10^{3}	6.97	FALSE
870	71-36-3	Alcohol, Butyl	1.21×10^{4}	1.69×10^{-3}	3.00×10^{3}	3.54	FALSE
870	67-63-0	Alcohol, Isopropyl	2.61×10^{5}	3.63×10^{-2}	4.90×10^{3}	5.79	FALSE

Table D.1–9. Projected Toxic Air Pollutant (TAP) Emissions No Action Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
870	7429-90-5	Aluminum	6.65×10^{5}	9.23×10^{-2}	5.00×10^{1}	5.90×10^{-2}	TRUE
870	1344-28-1	Aluminum Oxide	2.99×10^{5}	4.16×10^{-2}	5.00×10^{1}	5.90×10^{-2}	FALSE
870	1336-21-6	Ammonium Hydroxide	1.35×10^{4}	1.87×10^{-3}	No OEL		
870	1113-50-1	Boric Acid	1.20×10^{5}	1.66×10^{-2}	No OEL		
870	11-15-9	Cellosolve Acetate	6.52×10^{3}	9.05×10^{-4}	No OEL		
870		Cerric Ammonium Nitrate	2.00×10^{6}	2.77×10^{-1}	No OEL		
870		Citridet Cleaner	1.15×10^{6}	1.59×10^{-1}	1.21×10^{3}	1.43	FALSE
870	7440-50-8	Copper	6.65×10^{5}	9.23×10^{-2}	1.00	1.18×10^{-3}	TRUE
870	7440-50-8	Copper (0.10%)	5.99×10^{1}	8.32×10^{-6}	1.00	1.18×10^{-3}	FALSE
870		Carboxyl terminated acrylonitrile-butadiene Epoxy Resin	2.99×10^{5}	4.16×10^{-2}	No OEL		
870		Curing Agent Z (37% Methylene dianiline)	4.53×10^{5}	6.29×10^{-2}	No OEL		
870		2,6-diethylaniline curing agent	3.59×10^{5}	4.99×10^{-2}	No OEL		
870		Diala oil	5.01×10^{5}	6.95×10^{-2}	No OEL		
870	106-42-3	Di-p Xylene	9.07×10^{5}	1.26×10^{-1}	4.34×10^{3}	5.12	FALSE
870	7440-52-0	Erbium	1.50×10^{4}	2.08×10^{-3}	No OEL		
870		Fluorinert	5.60×10^{6}	7.77×10^{-1}	No OEL		
870		Glass microballoons filler	7.48×10^{4}	1.04×10^{-2}	No OEL		
870		Hexylene glycol	1.00×10^{6}	1.39×10^{-1}	1.21×10^{3}	1.43	FALSE
870	1309-37-1	Iron (53%)	3.17×10^{4}	4.41×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
870	123-92-2	Iso Amyl Acetate	7.94×10^{5}	1.10×10^{-1}	5.25×10^{3}	6.20	FALSE
870		Isopropyl alcohol	2.61×10^{5}	3.63×10^{-2}	4.90×10^{3}	5.79	FALSE
870		Mold Release	2.81×10^{5}	3.90×10^{-2}	No OEL		

Table D.1–9. Projected Toxic Air Pollutant (TAP) Emissions No Action Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
870	7439-98-7	Molybdenum	6.66×10^{3}	9.24×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
870	7697-37-2	Nitric Acid (70%)	1.60×10^{5}	2.22×10^{-2}	5.00×10^{1}	5.90×10^{-2}	FALSE
870		Oakite Citridet	1.00×10^{6}	1.39×10^{-1}	No OEL		
870	127-18-4	Perchloroethylene	1.01×10^{6}	1.41×10^{-1}	1.70×10^{3}	2.01	FALSE
870	7664-38-2	Phosphoric Acid	1.10×10^{5}	1.53×10^{-2}	1.00×10^{1}	1.18×10^{-2}	TRUE
870	1310-58-3	Potassium Hydroxide	1.50×10^{4}	2.08×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
870	7440-20-2	Scandium	1.50×10^{4}	2.08×10^{-3}	No OEL		
870	7631-86-9	Silica	9.04×10^{5}	1.26×10^{-1}	4.00×10^{1}	4.72×10^{-2}	TRUE
870		Silver Epoxy	1.50×10^{4}	2.08×10^{-3}	No OEL		
870	1310-73-2	Sodium Hydroxide	1.50×10^{4}	2.08×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
870	7664-93-9	Sulfuric Acid	1.10×10^{5}	1.53×10^{-2}	1.00×10^{1}	1.18×10^{-2}	TRUE
870	7704-98-5	Titanium Hydride	3.29×10^{3}	4.57×10^{-4}	No OEL		
870		Ultima Gold Packard (alkylnapthalene)	1.58×10^{6}	2.20×10^{-1}	No OEL		
878	110-80-5	2-Ethoxyethanol	1.86×10^{2}	2.59×10^{-5}	1.80×10^{1}	2.13×10^{-2}	FALSE
878	111-15-9	2-Ethoxyethyl acetate	1.28×10^{4}	1.78×10^{-3}	2.70×10^{1}	3.19×10^{-2}	FALSE
878	109-86-4	2-Methoxyethanol	1.31×10^{2}	1.82×10^{-5}	3.00	3.54×10^{-3}	FALSE
878	64-19-7	Acetic acid	1.92×10^{4}	2.66×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
878	67-64-1	Acetone	5.88×10^{5}	8.16×10^{-2}	5.90×10^{3}	6.97	FALSE
878	7429-90-5	Aluminum (fume or dust)	1.60×10^{4}	2.23×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	1344-28-1	Aluminum oxide (fibrous forms)	2.50×10^{6}	3.47×10^{-1}	5.00×10^{1}	5.90×10^{-2}	TRUE
878	12125-02-9	Ammonium chloride	1.50×10^{5}	2.08×10^{-2}	1.00×10^{2}	1.18×10^{-1}	FALSE
878	1303-96-4	Borates, tetra, sodium salts (anhydrous)	1.50×10^{4}	2.08×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	111-76-2	Butyl cellosolve (R)	8.95×10^{3}	1.24×10^{-3}	2.40×10^{2}	2.83×10^{-1}	FALSE

Table D.1–9. Projected Toxic Air Pollutant (TAP) Emissions No Action Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	1305-62-0	Calcium hydroxide	1.68×10^{4}	2.34×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	76-22-2	Camphor	1.12×10^{2}	1.55×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	1333-86-4	Carbon black	6.68×10^{2}	9.28×10^{-5}	3.50×10^{1}	4.13×10^{-2}	FALSE
878	2921-88-2	Chlorpyrifos	3.40	4.72×10^{-7}	2.00	2.36×10^{-3}	FALSE
878	7440-50-8	Copper dusts and mists, as copper	1.14×10^{5}	1.58×10^{-2}	1.00×10^{1}	1.18×10^{-2}	TRUE
878	110-82-7	Cyclohexane	5.11×10^{2}	7.09×10^{-5}	7.00×10^{3}	8.26	FALSE
878	108-93-0	Cyclohexanol	1.20×10^{1}	1.67×10^{-6}	2.00×10^{3}	2.36	FALSE
878	108-91-8	Cyclohexylamine	2.74×10^{4}	3.81×10^{-3}	4.00×10^{2}	4.72×10^{-1}	FALSE
878	111-40-0	Diethylene triamine	3.10×10^{3}	4.31×10^{-4}	4.00×10^{1}	4.72×10^{-2}	FALSE
878	109-87-5	Dimethyoxymethane (methylal)	5.10	7.09×10^{-7}	3.10×10^{4}	3.66×10^{1}	FALSE
878	141-43-5	Ethanolamine	2.29×10^{2}	3.18×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	141-78-6	Ethyl acetate	7.32×10^{2}	1.02×10^{-4}	1.40×10^{4}	1.65×10^{1}	FALSE
878	78-10-4	Ethyl silicate	7.18×10^{2}	9.97×10^{-5}	8.50×10^{2}	1.00	FALSE
878	64-18-6	Formic acid	8.52×10^{3}	1.18×10^{-3}	9.00×10^{1}	1.06×10^{-1}	FALSE
878	7722-84-1	Hydrogen peroxide (concentration> 52%)	4.41×10^{4}	6.12×10^{-3}	1.40×10^{1}	1.65×10^{-2}	FALSE
878	7783-06-4	Hydrogen sulfide	5.49×10^{3}	7.62×10^{-4}	1.40×10^{2}	1.65×10^{-1}	FALSE
878	61788-32-7	Hydrogenated terphenyls	4.77×10^{3}	6.62×10^{-4}	4.90×10^{1}	5.79×10^{-2}	FALSE
878	7440-74-6	Indium & compounds as indium	1.32×10^{4}	1.83×10^{-3}	1.00	1.18×10^{-3}	TRUE
878	7553-56-2	Iodine	1.05×10^{3}	1.46×10^{-4}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	1309-37-1	Iron oxide fume (Fe_2O_3) as iron	1.54×10^{4}	2.14×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	7439-89-6	Iron salts, soluble, as iron	1.20×10^{4}	1.67×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	26952-21-6	Isoacytl alcohol	1.02×10^{1}	1.42×10^{-6}	2.66×10^{3}	3.14	FALSE
878	110-19-0	Isobutyl acetate	7.64×10^{1}	1.06×10^{-5}	7.00×10^{3}	8.26	FALSE

Table D.1–9. Projected Toxic Air Pollutant (TAP) Emissions No Action Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	4098-71-9	Isophorone diisocyanate	1.50	2.08×10^{-7}	4.50×10^{-1}	5.31×10^{-4}	FALSE
878	67-63-0	Isopropyl alcohol	3.32×10^{5}	4.61×10^{-2}	4.90×10^{3}	5.79	FALSE
878	1309-48-4	Magnesium oxide	1.77×10^{3}	2.45×10^{-4}	6.00×10^{1}	7.08×10^{-2}	FALSE
878	5124-30-1	Methylene bis(4-cyclohexylisocyanate)	2.49×10^{2}	3.46×10^{-5}	5.40×10^{-1}	6.38×10^{-4}	FALSE
878	7439-98-7	Molybdenum as molybdenum (insoluble compounds)	2.36×10^{4}	3.28×10^{-3}	1.00×10^{2}	1.18×10^{-1}	FALSE
878	628-63-7	n-Amyl acetate	6.57×10^{2}	9.12×10^{-5}	2.60×10^{3}	3.07	FALSE
878	123-86-4	n-Butyl acetate	2.05×10^{3}	2.84×10^{-4}	7.10×10^{3}	8.38	FALSE
878	71-36-3	n-Butyl alcohol	1.01×10^{4}	1.40×10^{-3}	3.00×10^{3}	3.54	FALSE
878	2426-08-6	n-Butyl glycidyl ether (BGE)	4.08×10^{2}	5.67×10^{-5}	1.33×10^{3}	1.57	FALSE
878	142-82-5	n-Heptane	9.04×10^{2}	1.26×10^{-4}	3.50×10^{3}	4.13	FALSE
878	7697-37-2	Nitric acid	9.49×10^{4}	1.32×10^{-2}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	109-66-0	Pentane	4.87×10^{2}	6.76×10^{-5}	3.50×10^{3}	4.13	FALSE
878	8002-05-9	Petroleum	6.80×10^{2}	9.44×10^{-5}	3.50×10^{3}	4.13	FALSE
878	9003-53-6	Phenylethylene (styrene, monomer)	1.57×10^{2}	2.19×10^{-5}	8.50×10^{2}	1.00	FALSE
878	7664-38-2	Phosphoric acid	1.00×10^{4}	1.39×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	7440-06-4	Platinum metal	1.53×10^{4}	2.12×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	1310-58-3	Potassium hydroxide	4.35×10^{3}	6.05×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	71-23-8	Propyl alcohol	6.08×10^{3}	8.45×10^{-4}	4.92×10^{3}	5.81	FALSE
878	8003-34-7	Pyrethrins	3.54×10^{-1}	4.91×10^{-8}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	110-86-1	Pyridine	2.90×10^{2}	4.03×10^{-5}	1.50×10^{2}	1.77×10^{-1}	FALSE
878	14808-60-7	Quartz	6.03×10^{3}	8.38×10^{-4}	5.00×10^{-1}	5.90×10^{-4}	TRUE
878	78-92-2	sec-Butyl alcohol	2.01×10^{3}	2.79×10^{-4}	3.00×10^{3}	3.54	FALSE
878	7631-86-9	Silica, fused (respirable)	9.68×10^{3}	1.34×10^{-3}	5.00×10^{-1}	5.90×10^{-4}	TRUE

Table D.1–9. Projected Toxic Air Pollutant (TAP) Emissions No Action Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	7440-22-4	Silver metal	2.10×10^{4}	2.92×10^{-3}	1.00×10^{-1}	1.18×10^{-4}	TRUE
878	7631-90-5	Sodium bisulfite	7.50×10^{2}	1.04×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	1310-73-2	Sodium hydroxide	7.31×10^{2}	1.01×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	8052-41-3	Stoddard solvent	3.41×10^{2}	4.73×10^{-5}	3.50×10^{3}	4.13	FALSE
878	7664-93-9	Sulfuric acid	3.27×10^{2}	4.54×10^{-5}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	75-65-0	t-Butyl alcohol	5.10	7.09×10^{-7}	3.00×10^{3}	3.54	FALSE
878	7440-25-7	Tantalum	1.56×10^{3}	2.17×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	26140-60-3	Terphenyls	7.15×10^{2}	9.94×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	109-99-9	Tetrahydrofuran	6.34×10^{2}	8.81×10^{-5}	1.50×10^{3}	1.77	FALSE
878	7722-88-5	Tetrasodium pyrophosphate	2.25	3.12×10^{-7}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	7440-31-5	Tin metal	2.06×10^{4}	2.86×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	91-08-7	Toluene-2,6-diisocyanate	3.06×10^{1}	4.25×10^{-6}	7.00×10^{-1}	8.26×10^{-4}	FALSE
878	7440-33-7	Tungsten as Wolfram insoluble compounds	4.11×10^{4}	5.71×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	7440-62-2	Vanadium (fume or dust)	3.27×10^{4}	4.54×10^{-3}	5.00×10^{-1}	5.90×10^{-4}	TRUE
878	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	4.12×10^{-1}	5.73×10^{-8}	3.50×10^{3}	4.13	FALSE
878	7440-66-6	Zinc	1.45×10^{1}	2.01×10^{-6}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	1314-13-2	Zinc oxide	1.71×10^{2}	2.37×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
893	67-64-1	Acetone	4.68×10^{5}	6.50×10^{-2}	5.90×10^{3}	6.97	FALSE
893	7726-95-6	Bromine	1.55×10^{2}	2.16×10^{-5}	6.60	7.79×10^{-3}	FALSE
893	7722-84-1	Hydrogen peroxide (concentration> 52%)	1.30×10^{4}	1.80×10^{-3}	1.40×10^{1}	1.65×10^{-2}	FALSE
893	67-63-0	Isopropyl alcohol	1.77×10^{5}	2.46×10^{-2}	4.90×10^{3}	5.79	FALSE
893	7697-37-2	Nitric acid	1.36×10^{4}	1.89×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
893	1310-58-3	Potassium hydroxide	2.04×10^{3}	2.84×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE

Table D.1–9. Projected Toxic Air Pollutant (TAP) Emissions No Action Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
893	7664-93-9	Sulfuric acid	7.07×10^{4}	9.82×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
893	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	2.40×10^{3}	3.33×10^{-4}	3.50×10^{3}	4.13	FALSE
897	64-19-7	Acetic acid	4.95×10^{4}	6.88×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
897	67-64-1	Acetone	6.84×10^{4}	9.51×10^{-3}	5.90×10^{3}	6.97	FALSE
897	106-92-3	Allyl glycidyl ether	1.67×10^{1}	2.32×10^{-6}	2.20×10^{2}	2.60×10^{-1}	FALSE
897	1344-28-1	Aluminum oxide (fibrous forms)	1.50×10^{3}	2.08×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
897	128-37-0	Butylated hydroxytoluene	9.90×10^{1}	1.37×10^{-5}	1.00×10^{2}	1.18×10^{-1}	FALSE
897	420-04-2	Cyanamide	2.47×10^{1}	3.44×10^{-6}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	110-82-7	Cyclohexane	2.99	4.15×10^{-7}	7.00×10^{3}	8.26	FALSE
897	107-66-4	Dibutyl phosphate	2.72×10^{2}	3.78×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
897	124-40-3	Dimethylamine	3.98×10^{2}	5.53×10^{-5}	4.00×10^{1}	4.72×10^{-2}	FALSE
897	141-78-6	Ethyl acetate	1.78×10^{4}	2.47×10^{-3}	1.40×10^{4}	1.65×10^{1}	FALSE
897	60-29-7	Ethyl ether (diethyl ether)	2.18×10^{4}	3.03×10^{-3}	1.20×10^{4}	1.42×10^{1}	FALSE
897	78-10-4	Ethyl silicate	6.27×10^{2}	8.72×10^{-5}	8.50×10^{2}	1.00	FALSE
897	7722-84-1	Hydrogen peroxide (concentration> 52%)	2.36×10^{3}	3.28×10^{-4}	1.40×10^{1}	1.65×10^{-2}	FALSE
897	67-63-0	Isopropyl alcohol	7.77×10^{4}	1.08×10^{-2}	4.90×10^{3}	5.79	FALSE
897	8008-20-6	Kerosene	3.01×10^{3}	4.18×10^{-4}	1.00×10^{3}	1.18	FALSE
897	126-98-7	Methacrylonitrile	7.95×10^{1}	1.10×10^{-5}	2.70×10^{1}	3.19×10^{-2}	FALSE
897	681-84-5	Methyl silicate	2.24×10^{2}	3.12×10^{-5}	6.00×10^{1}	7.08×10^{-2}	FALSE
897	71-36-3	n-Butyl alcohol	1.57×10^{2}	2.19×10^{-5}	3.00×10^{3}	3.54	FALSE
897	142-82-5	n-Heptane	5.42×10^{3}	7.52×10^{-4}	3.50×10^{3}	4.13	FALSE
897	7697-37-2	Nitric acid	1.60×10^{1}	2.22×10^{-6}	5.00×10^{1}	5.90×10^{-2}	FALSE
897	144-62-7	Oxalic acid	3.92×10^{3}	5.44×10^{-4}	1.00×10^{1}	1.18×10^{-2}	FALSE

Table D.1–9. Projected Toxic Air Pollutant (TAP) Emissions No Action Alternative Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
897	109-66-0	Pentane	1.91×10^{3}	2.66×10^{-4}	3.50×10^{3}	4.13	FALSE
897	9003-53-6	Phenlylethylene (styrene, monomer)	8.00×10^{-1}	1.11×10^{-7}	8.50×10^{2}	1.00	FALSE
897	88-89-1	Picric acid (2,4,6-trinitrophenol)	9.95	1.38×10^{-6}	1.00	1.18×10^{-3}	FALSE
897	1310-58-3	Potassium hydroxide	9.30×10^{3}	1.29×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	71-23-8	Propyl alcohol	2.98×10^{4}	4.14×10^{-3}	4.92×10^{3}	5.81	FALSE
897	7440-22-4	Silver metal	1.68×10^{1}	2.33×10^{-6}	1.00×10^{-1}	1.18×10^{-4}	FALSE
897	1310-73-2	Sodium hydroxide	5.00×10^{2}	6.94×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	7664-93-9	Sulfuric acid	7.75×10^{3}	1.08×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
897	109-99-9	Tetrahydrofuran	1.17×10^{4}	1.62×10^{-3}	1.50×10^{3}	1.77	FALSE
897	7719-09-7	Thionyl chloride	4.89×10^{3}	6.80×10^{-4}	4.90×10^{1}	5.79×10^{-2}	FALSE
897	76-03-9	Trichloroacetic acid	5.00×10^{2}	6.94×10^{-5}	6.70×10^{1}	7.91×10^{-2}	FALSE
905	67-64-1	Acetone	2.81×10^{4}	3.90×10^{-3}	5.90×10^{3}	6.97	FALSE
905	67-63-0	Isopropyl alcohol	2.47×10^{4}	3.44×10^{-3}	4.90×10^{3}	5.79	FALSE
905	1309-48-4	Magnesium oxide	1.60×10^{3}	2.22×10^{-4}	6.00×10^{1}	7.08×10^{-2}	FALSE
905	109-99-9	Tetrahydrofuran	6.69×10^{3}	9.29×10^{-4}	1.50×10^{3}	1.77	FALSE
963	67-63-0	Isopropyl alcohol	7.85×10^{2}	1.09×10^{-4}	4.90×10^{3}	5.79	FALSE
981	67-64-1	Acetone	8.97×10^{3}	1.25×10^{-3}	5.90×10^{3}	6.97	FALSE
981	7664-93-9	Sulfuric acid	1.41×10^{5}	1.95×10^{-2}	1.00×10^{1}	1.18×10^{-2}	TRUE
986	67-64-1	Acetone	1.50×10^{4}	2.08×10^{-3}	5.90×10^{3}	6.97	FALSE

Table D.1–10. Projected Toxic Air Pollutant (TAP) Emissions Expanded Operations Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
605	79-09-4	Propionic acid	2.06×10^{2}	2.87×10^{-5}	3.00×10^{2}	3.54×10^{-1}	FALSE
605	7664-93-9	Sulfuric acid	1.65×10^{2}	2.29×10^{-5}	1.00×10^{1}	1.18×10^{-2}	FALSE
6580	141-78-6	Ethyl acetate	5.40×10^{3}	7.50×10^{-4}	1.40×10^{4}	1.65×10^{1}	FALSE
6580	7722-84-1	Hydrogen peroxide (concentration> 52%)	1.33×10^{3}	1.85×10^{-4}	1.40×10^{1}	1.65×10^{-2}	FALSE
6580	7697-37-2	Nitric acid	4.20×10^{4}	5.83×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
6580	1310-73-2	Sodium hydroxide	1.50×10^{4}	2.09×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
6580	7664-93-9	Sulfuric acid	2.76×10^{4}	3.83×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
6920	7697-37-2	Nitric acid	3.75×10^{2}	5.21×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
6920	1310-73-2	Sodium hydroxide	9.07×10^{2}	1.26×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
6920	7440-66-6	Zinc	2.00×10^{3}	2.78×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
858	64-19-7	Acetic acid	6.04×10^{4}	8.39×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
858	67-64-1	Acetone	3.26×10^{4}	4.53×10^{-3}	5.90×10^{3}	6.97	FALSE
858	7722-84-1	Hydrogen peroxide (concentration> 52%)	3.33×10^{6}	4.62×10^{-1}	1.40×10^{1}	1.65×10^{-2}	TRUE
858	7697-37-2	Nitric acid	4.27×10^{6}	5.93×10^{-1}	5.00×10^{1}	5.90×10^{-2}	TRUE
858	7664-38-2	Phosphoric acid	8.13×10^{4}	1.13×10^{-2}	1.00×10^{1}	1.18×10^{-2}	FALSE
858	7803-62-5	Silane (silicon tetrahydride)	1.90×10^{5}	2.65×10^{-2}	6.60×10^{1}	7.79×10^{-2}	FALSE
858	1310-73-2	Sodium hydroxide	6.56×10^{7}	9.11	2.00×10^{1}	2.36×10^{-2}	TRUE
858	7664-93-9	Sulfuric acid	6.19×10^{4}	8.60×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
870	64-19-7	Acetic Acid	1.05×10^{5}	1.45×10^{-2}	2.50×10^{2}	2.95×10^{-1}	FALSE
870	64-19-7	Acetic Acid, Glacial	1.15×10^{5}	1.60×10^{-2}	2.50×10^{2}	2.95×10^{-1}	FALSE
870	67-64-1	Acetone	6.46×10^{6}	8.97×10^{-1}	5.90×10^{3}	6.97	FALSE
870	71-36-3	Alcohol, Butyl	1.21×10^{4}	1.69×10^{-3}	3.00×10^{3}	3.54	FALSE
870	67-63-0	Alcohol, Isopropyl	2.61×10^{5}	3.63×10^{-2}	4.90×10^{3}	5.79	FALSE

Table D.1–10. Projected Toxic Air Pollutant (TAP) Emissions Expanded Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
870	7429-90-5	Aluminum	6.65×10^{5}	9.23×10^{-2}	5.00×10^{1}	5.90×10^{-2}	TRUE
870	1344-28-1	Aluminum Oxide	2.99×10^{5}	4.16×10^{-2}	5.00×10^{1}	5.90×10^{-2}	FALSE
870	1336-21-6	Ammonium Hydroxide	1.35×10^{4}	1.87×10^{-3}	No OEL		
870	1113-50-1	Boric Acid	1.20×10^{5}	1.66×10^{-2}	No OEL		
870	11-15-9	Cellosolve Acetate	6.52×10^{3}	9.05×10^{-4}	No OEL		
870		Cerric Ammonium Nitrate	2.00×10^{6}	2.77×10^{-1}	No OEL		
870		Citridet Cleaner	1.15×10^{6}	1.59×10^{-1}	1.21×10^{3}	1.43	FALSE
870	7440-50-8	Copper	6.65×10^{5}	9.23×10^{-2}	1.00	1.18×10^{-3}	TRUE
870	7440-50-8	Copper (0.10%)	5.99×10^{1}	8.32×10^{-6}	1.00	1.18×10^{-3}	FALSE
870		Carboxyl terminated acrylonitrile-butadiene Epoxy Resin	2.99×10^{5}	4.16×10^{-2}	No OEL		
870		Curing Agent Z (37% Methylene dianiline)	4.53×10^{5}	6.29×10^{-2}	No OEL		
870		2,6-diethylaniline curing agent	3.59×10^{5}	4.99×10^{-2}	No OEL		
870		Diala oil	5.01×10^{5}	6.95×10^{-2}	No OEL		
870	106-42-3	Di-p Xylene	9.07×10^{5}	1.26×10^{-1}	4.35×10^{3}	5.12	FALSE
870	7440-52-0	Erbium	1.50×10^{4}	2.08×10^{-3}	No OEL		
870		Fluorinert	5.60×10^{6}	7.77×10^{-1}	No OEL		
870		Glass microballoons filler	7.48×10^{4}	1.04×10^{-2}	No OEL		
870		Hexylene glycol	1.00×10^{6}	1.39×10^{-1}	1.21×10^{3}	1.43	FALSE
870	1309-37-1	Iron (53%)	3.17×10^{4}	4.41×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
870	123-92-2	Iso Amyl Acetate	7.94×10^{5}	1.10×10^{-1}	5.25×10^{3}	6.20	FALSE
870		Isopropyl alcohol	2.61×10^{5}	3.63×10^{-2}	4.90×10^{3}	5.79	FALSE
870		Mold Release	2.81×10^{5}	3.90×10^{-2}	No OEL		

Table D.1–10. Projected Toxic Air Pollutant (TAP) Emissions Expanded Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
870	7439-98-7	Molybdenum	$6.66x10^{3}$	$9.24x10^{-4}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
870	7697-37-2	Nitric Acid (70%)	$1.60x10^{5}$	$2.22x10^{-2}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
870		Oakite Citridet	$1.00x10^{6}$	$1.39x10^{-1}$	No OEL		
870	127-18-4	Perchloroethylene	$1.01x10^{6}$	$1.41x10^{-1}$	$1.70x10^{3}$	2.01	FALSE
870	7664-38-2	Phosphoric Acid	$1.10x10^{5}$	$1.53x10^{-2}$	$1.00x10^{1}$	$1.18x10^{-2}$	TRUE
870	1310-58-3	Potassium Hydroxide	$1.50x10^{4}$	$2.08x10^{-3}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
870	7440-20-2	Scandium	$1.50x10^{4}$	$2.08x10^{-3}$	No OEL		
870	7631-86-9	Silica	$9.04x10^{5}$	$1.26x10^{-1}$	$4.00x10^{1}$	$4.72x10^{-2}$	TRUE
870		Silver Epoxy	$1.50x10^{4}$	$2.08x10^{-3}$	No OEL		
870	1310-73-2	Sodium Hydroxide	$1.50x10^{4}$	$2.08x10^{-3}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
870	7664-93-9	Sulfuric Acid	$1.10x10^{5}$	$1.53x10^{-2}$	$1.00x10^{1}$	$1.18x10^{-2}$	TRUE
870	7704-98-5	Titanium Hydride	$3.29x10^{3}$	$4.57x10^{-4}$	No OEL		
870		Ultima Gold Packard (alkylnapthalene)	$1.58x10^{6}$	$2.20x10^{-1}$	No OEL		
878	110-80-5	2-Ethoxyethanol	$2.48x10^{2}$	$3.45x10^{-5}$	$1.80x10^{1}$	$2.13x10^{-2}$	FALSE
878	111-15-9	2-Ethoxyethyl acetate	$1.71x10^{4}$	$2.37x10^{-3}$	$2.70x10^{1}$	$3.19x10^{-2}$	FALSE
878	109-86-4	2-Methoxyethanol	$1.75x10^{2}$	$2.43x10^{-5}$	3.00	$3.54x10^{-3}$	FALSE
878	64-19-7	Acetic acid	$2.55x10^{4}$	$3.55x10^{-3}$	$2.50x10^{2}$	$2.95x10^{-1}$	FALSE
878	67-64-1	Acetone	$7.83x10^{5}$	$1.09x10^{-1}$	$5.90x10^{3}$	6.97	FALSE
878	7429-90-5	Aluminum (fume or dust)	$2.14x10^{4}$	$2.97x10^{-3}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
878	1344-28-1	Aluminum oxide (fibrous forms)	$3.33x10^{6}$	$4.63x10^{-1}$	$5.00x10^{1}$	$5.90x10^{-2}$	TRUE
878	12125-02-9	Ammonium chloride	$2.00x10^{5}$	$2.78x10^{-2}$	$1.00x10^{2}$	$1.18x10^{-1}$	FALSE
878	1303-96-4	Borates, tetra, sodium salts (anhydrous)	$2.00x10^{4}$	$2.78x10^{-3}$	$1.00x10^{1}$	$1.18x10^{-2}$	FALSE
878	111-76-2	Butyl cellosolve (R)	$1.19x10^{4}$	$1.66x10^{-3}$	$2.40x10^{2}$	$2.83x10^{-1}$	FALSE

Table D.1–10. Projected Toxic Air Pollutant (TAP) Emissions Expanded Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	1305-62-0	Calcium hydroxide	2.24×10^{4}	3.12×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	76-22-2	Camphor	1.49×10^{2}	2.07×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	1333-86-4	Carbon black	8.91×10^{2}	1.24×10^{-4}	3.50×10^{1}	4.13×10^{-2}	FALSE
878	2921-88-2	Chlorpyrifos	4.54	6.30×10^{-7}	2.00	2.36×10^{-3}	FALSE
878	7440-50-8	Copper dusts and mists, as copper	1.52×10^{5}	2.11×10^{-2}	1.00×10^{1}	1.18×10^{-2}	TRUE
878	110-82-7	Cyclohexane	6.81×10^{2}	9.46×10^{-5}	7.00×10^{3}	8.26	FALSE
878	108-93-0	Cyclohexanol	1.60×10^{1}	2.22×10^{-6}	2.00×10^{3}	2.36	FALSE
878	108-91-8	Cyclohexylamine	3.65×10^{4}	5.07×10^{-3}	4.00×10^{2}	4.72×10^{-1}	FALSE
878	111-40-0	Diethylene triamine	4.13×10^{3}	5.74×10^{-4}	4.00×10^{1}	4.72×10^{-2}	FALSE
878	109-87-5	Dimethyoxymethane (methylal)	6.80	9.45×10^{-7}	3.10×10^{4}	3.66×10^{1}	FALSE
878	141-43-5	Ethanolamine	3.05×10^{2}	4.24×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	141-78-6	Ethyl acetate	9.75×10^{2}	1.35×10^{-4}	1.40×10^{4}	1.65×10^{1}	FALSE
878	78-10-4	Ethyl silicate	9.57×10^{2}	1.33×10^{-4}	8.50×10^{2}	1.00	FALSE
878	64-18-6	Formic acid	1.14×10^{4}	1.58×10^{-3}	9.00×10^{1}	1.06×10^{-1}	FALSE
878	7722-84-1	Hydrogen peroxide (concentration> 52%)	5.88×10^{4}	8.16×10^{-3}	1.40×10^{1}	1.65×10^{-2}	FALSE
878	7783-06-4	Hydrogen sulfide	7.32×10^{3}	1.02×10^{-3}	1.40×10^{2}	1.65×10^{-1}	FALSE
878	61788-32-7	Hydrogenated terphenyls	6.36×10^{3}	8.83×10^{-4}	4.90×10^{1}	5.79×10^{-2}	FALSE
878	7440-74-6	Indium & compounds as indium	1.76×10^{4}	2.44×10^{-3}	1.00	1.18×10^{-3}	TRUE
878	7553-56-2	Iodine	1.40×10^{3}	1.94×10^{-4}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	1309-37-1	Iron oxide fume (Fe_2O_3) as iron	2.05×10^{4}	2.85×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	7439-89-6	Iron salts, soluble, as iron	1.61×10^{4}	2.23×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	26952-21-6	Isoacytl alcohol	1.36×10^{1}	1.89×10^{-6}	2.66×10^{3}	3.14	FALSE
878	110-19-0	Isobutyl acetate	1.02×10^{2}	1.42×10^{-5}	7.00×10^{3}	8.26	FALSE

Table D.1–10. Projected Toxic Air Pollutant (TAP) Emissions Expanded Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	4098-71-9	Isophorone diisocyanate	2.00	2.78×10^{-7}	4.50×10^{-1}	5.31×10^{-4}	FALSE
878	67-63-0	Isopropyl alcohol	4.42×10^{5}	6.14×10^{-2}	4.90×10^{3}	5.79	FALSE
878	1309-48-4	Magnesium oxide	2.35×10^{3}	3.27×10^{-4}	6.00×10^{1}	7.08×10^{-2}	FALSE
878	5124-30-1	Methylene bis(4-cyclohexylisocyanate)	3.32×10^{2}	4.61×10^{-5}	5.40×10^{-1}	6.38×10^{-4}	FALSE
878	7439-98-7	Molybdenum as molybdenum (insoluble compounds)	3.15×10^{4}	4.37×10^{-3}	1.00×10^{2}	1.18×10^{-1}	FALSE
878	628-63-7	n-Amyl acetate	8.76×10^{2}	1.22×10^{-4}	2.60×10^{3}	3.07	FALSE
878	123-86-4	n-Butyl acetate	2.73×10^{3}	3.79×10^{-4}	7.10×10^{3}	8.38	FALSE
878	71-36-3	n-Butyl alcohol	1.35×10^{4}	1.87×10^{-3}	3.00×10^{3}	3.54	FALSE
878	2426-08-6	n-Butyl glycidyl ether (BGE)	5.44×10^{2}	7.56×10^{-5}	1.33×10^{3}	1.57	FALSE
878	142-82-5	n-Heptane	1.21×10^{3}	1.67×10^{-4}	3.50×10^{3}	4.13	FALSE
878	7697-37-2	Nitric acid	1.27×10^{5}	1.76×10^{-2}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	109-66-0	Pentane	6.49×10^{2}	9.02×10^{-5}	3.50×10^{3}	4.13	FALSE
878	8002-05-9	Petroleum	9.07×10^{2}	1.26×10^{-4}	3.50×10^{3}	4.13	FALSE
878	9003-53-6	Phenlylethylene (styrene, monomer)	2.10×10^{2}	2.92×10^{-5}	8.50×10^{2}	1.00	FALSE
878	7664-38-2	Phosphoric acid	1.34×10^{4}	1.86×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	7440-06-4	Platinum metal	2.03×10^{4}	2.83×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	1310-58-3	Potassium hydroxide	5.80×10^{3}	8.06×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	71-23-8	Propyl alcohol	8.11×10^{3}	1.13×10^{-3}	4.92×10^{3}	5.81	FALSE
878	8003-34-7	Pyrethrins	4.72×10^{-1}	6.55×10^{-8}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	110-86-1	Pyridine	3.87×10^{2}	5.38×10^{-5}	1.50×10^{2}	1.77×10^{-1}	FALSE
878	14808-60-7	Quartz	8.05×10^{3}	1.12×10^{-3}	5.00×10^{-1}	5.90×10^{-4}	TRUE
878	78-92-2	sec-Butyl alcohol	2.67×10^{3}	3.71×10^{-4}	3.00×10^{3}	3.54	FALSE
878	7631-86-9	Silica, fused (respirable)	1.29×10^{4}	1.79×10^{-3}	5.00×10^{-1}	5.90×10^{-4}	TRUE

Table D.1–10. Projected Toxic Air Pollutant (TAP) Emissions Expanded Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	7440-22-4	Silver metal	2.80×10^{4}	3.89×10^{-3}	1.00×10^{-1}	1.18×10^{-4}	TRUE
878	7631-90-5	Sodium bisulfite	1.00×10^{3}	1.39×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	1310-73-2	Sodium hydroxide	9.74×10^{2}	1.35×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	8052-41-3	Stoddard solvent	4.54×10^{2}	6.31×10^{-5}	3.50×10^{3}	4.13	FALSE
878	7664-93-9	Sulfuric acid	4.35×10^{2}	6.05×10^{-5}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	75-65-0	t-Butyl alcohol	6.80	9.45×10^{-7}	3.00×10^{3}	3.54	FALSE
878	7440-25-7	Tantalum	2.08×10^{3}	2.89×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	26140-60-3	Terphenyls	9.54×10^{2}	1.32×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	109-99-9	Tetrahydrofuran	8.46×10^{2}	1.17×10^{-4}	1.50×10^{3}	1.77	FALSE
878	7722-88-5	Tetrasodium pyrophosphate	3.00	4.17×10^{-7}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	7440-31-5	Tin metal	2.74×10^{4}	3.81×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	91-08-7	Toluene-2,6-diisocyanate	4.08×10^{1}	5.67×10^{-6}	7.00×10^{-1}	8.26×10^{-4}	FALSE
878	7440-33-7	Tungsten as Wolfram insoluble compounds	5.49×10^{4}	7.62×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	7440-62-2	Vanadium (fume or dust)	4.36×10^{4}	6.05×10^{-3}	5.00×10^{-1}	5.90×10^{-4}	TRUE
878	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	5.50×10^{-1}	7.64×10^{-8}	3.50×10^{3}	4.13	FALSE
878	7440-66-6	Zinc	1.93×10^{1}	2.68×10^{-6}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	1314-13-2	Zinc oxide	2.28×10^{2}	3.17×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
893	67-64-1	Acetone	9.36×10^{5}	1.30×10^{-1}	5.90×10^{3}	6.97	FALSE
893	7726-95-6	Bromine	3.11×10^{2}	4.32×10^{-5}	6.60	7.79×10^{-3}	FALSE
893	7722-84-1	Hydrogen peroxide (concentration> 52%)	2.60×10^{4}	3.61×10^{-3}	1.40×10^{1}	1.65×10^{-2}	FALSE
893	67-63-0	Isopropyl alcohol	3.54×10^{5}	4.92×10^{-2}	4.90×10^{3}	5.79	FALSE
893	7697-37-2	Nitric acid	2.71×10^{4}	3.77×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
893	1310-58-3	Potassium hydroxide	4.09×10^{3}	5.67×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE

Table D.1–10. Projected Toxic Air Pollutant (TAP) Emissions Expanded Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
893	7664-93-9	Sulfuric acid	1.41×10^{5}	1.96×10^{-2}	1.00×10^{1}	1.18×10^{-2}	TRUE
893	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	4.80×10^{3}	6.67×10^{-4}	3.50×10^{3}	4.13	FALSE
897	64-19-7	Acetic acid	4.95×10^{4}	6.88×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
897	67-64-1	Acetone	6.84×10^{4}	9.51×10^{-3}	5.90×10^{3}	6.97	FALSE
897	106-92-3	Allyl glycidyl ether	1.67×10^{1}	2.32×10^{-6}	2.20×10^{2}	2.60×10^{-1}	FALSE
897	1344-28-1	Aluminum oxide (fibrous forms)	1.50×10^{3}	2.08×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
897	128-37-0	Butylated hydroxytoluene	9.90×10^{1}	1.37×10^{-5}	1.00×10^{2}	1.18×10^{-1}	FALSE
897	420-04-2	Cyanamide	2.47×10^{1}	3.44×10^{-6}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	110-82-7	Cyclohexane	2.99	4.15×10^{-7}	7.00×10^{3}	8.26	FALSE
897	107-66-4	Dibutyl phosphate	2.72×10^{2}	3.78×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
897	124-40-3	Dimethylamine	3.98×10^{2}	5.53×10^{-5}	4.00×10^{1}	4.72×10^{-2}	FALSE
897	141-78-6	Ethyl acetate	1.78×10^{4}	2.47×10^{-3}	1.40×10^{4}	1.65×10^{1}	FALSE
897	60-29-7	Ethyl ether (diethyl ether)	2.18×10^{4}	3.03×10^{-3}	1.20×10^{4}	1.42×10^{1}	FALSE
897	78-10-4	Ethyl silicate	6.27×10^{2}	8.72×10^{-5}	8.50×10^{2}	1.00	FALSE
897	7722-84-1	Hydrogen peroxide (concentration> 52%)	2.36×10^{3}	3.28×10^{-4}	1.40×10^{1}	1.65×10^{-2}	FALSE
897	67-63-0	Isopropyl alcohol	7.77×10^{4}	1.08×10^{-2}	4.90×10^{3}	5.79	FALSE
897	8008-20-6	Kerosene	3.01×10^{3}	4.18×10^{-4}	1.00×10^{3}	1.18	FALSE
897	126-98-7	Methacrylonitrile	7.95×10^{1}	1.10×10^{-5}	2.70×10^{1}	3.19×10^{-2}	FALSE
897	681-84-5	Methyl silicate	2.24×10^{2}	3.12×10^{-5}	6.00×10^{1}	7.08×10^{-2}	FALSE
897	71-36-3	n-Butyl alcohol	1.57×10^{2}	2.19×10^{-5}	3.00×10^{3}	3.54	FALSE
897	142-82-5	n-Heptane	5.42×10^{3}	7.52×10^{-4}	3.50×10^{3}	4.13	FALSE
897	7697-37-2	Nitric acid	1.60×10^{1}	2.22×10^{-6}	5.00×10^{1}	5.90×10^{-2}	FALSE
897	144-62-7	Oxalic acid	3.92×10^{3}	5.44×10^{-4}	1.00×10^{1}	1.18×10^{-2}	FALSE

Table D.1–10. Projected Toxic Air Pollutant (TAP) Emissions Expanded Operations Alternative Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
897	109-66-0	Pentane	1.91×10^{3}	2.66×10^{-4}	3.50×10^{3}	4.13	FALSE
897	9003-53-6	Phenlylethylene (styrene, monomer)	8.00×10^{-1}	1.11×10^{-7}	8.50×10^{2}	1.00	FALSE
897	88-89-1	Picric acid (2,4,6-trinitrophenol)	9.95	1.38×10^{-6}	1.00	1.18×10^{-3}	FALSE
897	1310-58-3	Potassium hydroxide	9.30×10^{3}	1.29×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	71-23-8	Propyl alcohol	2.98×10^{4}	4.14×10^{-3}	4.92×10^{3}	5.81	FALSE
897	7440-22-4	Silver metal	1.68×10^{1}	2.33×10^{-6}	1.00×10^{-1}	1.18×10^{-4}	FALSE
897	1310-73-2	Sodium hydroxide	5.00×10^{2}	6.94×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	7664-93-9	Sulfuric acid	7.75×10^{3}	1.08×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
897	109-99-9	Tetrahydrofuran	1.17×10^{4}	1.62×10^{-3}	1.50×10^{3}	1.77	FALSE
897	7719-09-7	Thionyl chloride	4.89×10^{3}	6.80×10^{-4}	4.90×10^{1}	5.79×10^{-2}	FALSE
897	76-03-9	Trichloroacetic acid	5.00×10^{2}	6.94×10^{-5}	6.70×10^{1}	7.91×10^{-2}	FALSE
905	67-64-1	Acetone	2.81×10^{4}	3.90×10^{-3}	5.90×10^{3}	6.97	FALSE
905	67-63-0	Isopropyl alcohol	2.47×10^{4}	3.44×10^{-3}	4.90×10^{3}	5.79	FALSE
905	1309-48-4	Magnesium oxide	1.60×10^{3}	2.22×10^{-4}	6.00×10^{1}	7.08×10^{-2}	FALSE
905	109-99-9	Tetrahydrofuran-	6.69×10^{3}	9.29×10^{-4}	1.50×10^{3}	1.77	FALSE
963	67-63-0	Isopropyl alcohol	1.57×10^{3}	2.18×10^{-4}	4.90×10^{3}	5.79	FALSE
981	67-64-1	Acetone	2.30×10^{4}	3.20×10^{-3}	5.90×10^{3}	6.97	FALSE
981	7664-93-9	Sulfuric acid	3.61×10^{5}	5.02×10^{-2}	1.00×10^{1}	1.18×10^{-2}	TRUE
986	67-64-1	Acetone	2.21×10^{4}	3.07×10^{-3}	5.90×10^{3}	6.97	FALSE

Table D.1–11. Projected Toxic Air Pollutant (TAP) Emissions Reduced Operations Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
605	79-09-4	Propionic acid	1.03×10^{2}	1.43×10^{-5}	3.00×10^{2}	3.54×10^{-1}	FALSE
605	7664-93-9	Sulfuric acid	8.25×10^{1}	1.15×10^{-5}	1.00×10^{1}	1.18×10^{-2}	FALSE
6580	141-78-6	Ethyl acetate	9.00×10^{2}	1.25×10^{-4}	1.40×10^{4}	1.65×10^{1}	FALSE
6580	7722-84-1	Hydrogen peroxide (concentration> 52%)	1.66×10^{2}	2.31×10^{-5}	1.40×10^{1}	1.65×10^{-2}	FALSE
6580	7697-37-2	Nitric acid	5.25×10^{3}	7.29×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
6580	1310-73-2	Sodium hydroxide	5.65×10^{3}	7.85×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
6580	7664-93-9	Sulfuric acid	2.76×10^{3}	3.83×10^{-4}	1.00×10^{1}	1.18×10^{-2}	FALSE
6920	7697-37-2	Nitric acid	1.87×10^{2}	2.60×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
6920	1310-73-2	Sodium hydroxide	4.54×10^{2}	6.30×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE
6920	7440-66-6	Zinc	1.00×10^{3}	1.39×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
858	64-19-7	Acetic acid	2.16×10^{4}	3.00×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
858	67-64-1	Acetone	1.16×10^{4}	1.62×10^{-3}	5.90×10^{3}	6.97	FALSE
858	7722-84-1	Hydrogen peroxide (concentration> 52%)	1.19×10^{6}	1.65×10^{-1}	1.40×10^{1}	1.65×10^{-2}	TRUE
858	7697-37-2	Nitric acid	1.53×10^{6}	2.12×10^{-1}	5.00×10^{1}	5.90×10^{-2}	TRUE
858	7664-38-2	Phosphoric acid	2.91×10^{4}	4.04×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
858	7803-62-5	Silane (silicon tetrahydride)	6.81×10^{4}	9.45×10^{-3}	6.60×10^{1}	7.79×10^{-2}	FALSE
858	1310-73-2	Sodium hydroxide	2.34×10^{7}	3.25	2.00×10^{1}	2.36×10^{-2}	TRUE
858	7664-93-9	Sulfuric acid	2.21×10^{4}	3.07×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
870	64-19-7	Acetic Acid	1.05×10^{5}	1.45×10^{-2}	2.50×10^{2}	2.95×10^{-1}	FALSE
870	64-19-7	Acetic Acid, Glacial	1.15×10^{5}	1.60×10^{-2}	2.50×10^{2}	2.95×10^{-1}	FALSE
870	67-64-1	Acetone	6.46×10^{6}	8.97×10^{-1}	5.90×10^{3}	6.97	FALSE
870	71-36-3	Alcohol, Butyl	1.21×10^{4}	1.69×10^{-3}	3.00×10^{3}	3.54	FALSE
870	67-63-0	Alcohol, Isopropyl	2.61×10^{5}	3.63×10^{-2}	4.90×10^{3}	5.79	FALSE

Table D.1–11. Projected Toxic Air Pollutant (TAP) Emissions Reduced Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
870	7429-90-5	Aluminum	6.65×10^{5}	9.23×10^{-2}	5.00×10^{1}	5.90×10^{-2}	TRUE
870	1344-28-1	Aluminum Oxide	2.99×10^{5}	4.16×10^{-2}	5.00×10^{1}	5.90×10^{-2}	FALSE
870	1336-21-6	Ammonium Hydroxide	1.35×10^{4}	1.87×10^{-3}	No OEL		
870	1113-50-1	Boric Acid	1.20×10^{5}	1.66×10^{-2}	No OEL		
870	11-15-9	Cellosolve Acetate	6.52×10^{3}	9.05×10^{-4}	No OEL		
870		Cerric Ammonium Nitrate	2.00×10^{6}	2.77×10^{-1}	No OEL		
870		Citridet Cleaner	1.15×10^{6}	1.59×10^{-1}	1.21×10^{3}	1.43	FALSE
870	7440-50-8	Copper	6.65×10^{5}	9.23×10^{-2}	1.00	1.18×10^{-3}	TRUE
870	7440-50-8	Copper (0.10%)	5.99×10^{1}	8.32×10^{-6}	1.00	1.18×10^{-3}	FALSE
870		Carboxyl terminated acrylonitrile-butadiene Epoxy Resin	2.99×10^{5}	4.16×10^{-2}	No OEL		
870		Curing Agent Z (37% Methylene dianiline)	4.53×10^{5}	6.29×10^{-2}	No OEL		
870		2,6-diethylaniline curing agent	3.59×10^{5}	4.99×10^{-2}	No OEL		
870		Diala oil	5.01×10^{5}	6.95×10^{-2}	No OEL		
870	106-42-3	Di-p Xylene	9.07×10^{5}	1.26×10^{-1}	4.35×10^{3}	5.12	FALSE
870	7440-52-0	Erbium	1.50×10^{4}	2.08×10^{-3}	No OEL		
870		Fluorinert	5.60×10^{6}	7.77×10^{-1}	No OEL		
870		Glass microballoons filler	7.48×10^{4}	1.04×10^{-2}	No OEL		
870		Hexylene glycol	1.00×10^{6}	1.39×10^{-1}	1.21×10^{3}	1.43	FALSE
870	1309-37-1	Iron (53%)	3.17×10^{4}	4.41×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
870	123-92-2	Iso Amyl Acetate	7.94×10^{5}	1.10×10^{-1}	5.25×10^{3}	6.20	FALSE
870		Isopropyl alcohol	2.61×10^{5}	3.63×10^{-2}	4.90×10^{3}	5.79	FALSE
870		Mold Release	2.81×10^{5}	3.90×10^{-2}	No OEL		

Table D.1–11. Projected Toxic Air Pollutant (TAP) Emissions Reduced Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
870	7439-98-7	Molybdenum	$6.66x10^{3}$	$9.24x10^{-4}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
870	7697-37-2	Nitric Acid (70%)	$1.60x10^{5}$	$2.22x10^{-2}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
870		Oakite Citridet	$1.00x10^{6}$	$1.39x10^{-1}$	No OEL		
870	127-18-4	Perchloroethylene	$1.01x10^{6}$	$1.41x10^{-1}$	$1.70x10^{3}$	2.01	FALSE
870	7664-38-2	Phosphoric Acid	$1.10x10^{5}$	$1.53x10^{-2}$	$1.00x10^{1}$	$1.18x10^{-2}$	TRUE
870	1310-58-3	Potassium Hydroxide	$1.50x10^{4}$	$2.08x10^{-3}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
870	7440-20-2	Scandium	$1.50x10^{4}$	$2.08x10^{-3}$	No OEL		
870	7631-86-9	Silica	$9.04x10^{5}$	$1.26x10^{-1}$	$4.00x10^{1}$	$4.72x10^{-2}$	TRUE
870		Silver Epoxy	$1.50x10^{4}$	$2.08x10^{-3}$	No OEL		
870	1310-73-2	Sodium Hydroxide	$1.50x10^{4}$	$2.08x10^{-3}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
870	7664-93-9	Sulfuric Acid	$1.10x10^{5}$	$1.53x10^{-2}$	$1.00x10^{1}$	$1.18x10^{-2}$	TRUE
870	7704-98-5	Titanium Hydride	$3.29x10^{3}$	$4.57x10^{-4}$	No OEL		
870		Ultima Gold Packard (alkylnapthalene)	$1.58x10^{6}$	$2.20x10^{-1}$	No OEL		
878	110-80-5	2-Ethoxyethanol	$1.24x10^{2}$	$1.73x10^{-5}$	$1.80x10^{1}$	$2.13x10^{-2}$	FALSE
878	111-15-9	2-Ethoxyethyl acetate	$8.53x10^{3}$	$1.18x10^{-3}$	$2.70x10^{1}$	$3.19x10^{-2}$	FALSE
878	109-86-4	2-Methoxyethanol	$8.75x10^{1}$	$1.22x10^{-5}$	3.00	$3.54x10^{-3}$	FALSE
878	64-19-7	Acetic acid	$1.28x10^{4}$	$1.77x10^{-3}$	$2.50x10^{2}$	$2.95x10^{-1}$	FALSE
878	67-64-1	Acetone	$3.92x10^{5}$	$5.44x10^{-2}$	$5.90x10^{3}$	6.97	FALSE
878	7429-90-5	Aluminum (fume or dust)	$1.07x10^{4}$	$1.48x10^{-3}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
878	1344-28-1	Aluminum oxide (fibrous forms)	$1.67x10^{6}$	$2.31x10^{-1}$	$5.00x10^{1}$	$5.90x10^{-2}$	TRUE
878	12125-02-9	Ammonium chloride	$9.99x10^{4}$	$1.39x10^{-2}$	$1.00x10^{2}$	$1.18x10^{-1}$	FALSE
878	1303-96-4	Borates, tetra, sodium salts (anhydrous)	$1.00x10^{4}$	$1.39x10^{-3}$	$1.00x10^{1}$	$1.18x10^{-2}$	FALSE
878	111-76-2	Butyl cellosolve (R)	$5.97x10^{3}$	$8.29x10^{-4}$	$2.40x10^{2}$	$2.83x10^{-1}$	FALSE

Table D.1–11. Projected Toxic Air Pollutant (TAP) Emissions Reduced Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	1305-62-0	Calcium hydroxide	$1.12x10^{4}$	$1.56x10^{-3}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
878	76-22-2	Camphor	$7.44x10^{1}$	$1.03x10^{-5}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
878	1333-86-4	Carbon black	$4.46x10^{2}$	$6.19x10^{-5}$	$3.50x10^{1}$	$4.13x10^{-2}$	FALSE
878	2921-88-2	Chlorpyrifos	2.27	$3.15x10^{-7}$	2.00	$2.36x10^{-3}$	FALSE
878	7440-50-8	Copper dusts and mists, as copper	$7.60x10^{4}$	$1.06x10^{-2}$	$1.00x10^{1}$	$1.18x10^{-2}$	FALSE
878	110-82-7	Cyclohexane	$3.40x10^{2}$	$4.73x10^{-5}$	$7.00x10^{3}$	8.26	FALSE
878	108-93-0	Cyclohexanol	8.00	$1.11x10^{-6}$	$2.00x10^{3}$	2.36	FALSE
878	108-91-8	Cyclohexylamine	$1.83x10^{4}$	$2.54x10^{-3}$	$4.00x10^{2}$	$4.72x10^{-1}$	FALSE
878	111-40-0	Diethylene triamine	$2.07x10^{3}$	$2.87x10^{-4}$	$4.00x10^{1}$	$4.72x10^{-2}$	FALSE
878	109-87-5	Dimethyoxymethane (methylal)	3.40	$4.72x10^{-7}$	$3.10x10^{4}$	$3.66x10^{1}$	FALSE
878	141-43-5	Ethanolamine	$1.53x10^{2}$	$2.12x10^{-5}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
878	141-78-6	Ethyl acetate	$4.88x10^{2}$	$6.77x10^{-5}$	$1.40x10^{4}$	$1.65x10^{1}$	FALSE
878	78-10-4	Ethyl silicate	$4.79x10^{2}$	$6.65x10^{-5}$	$8.50x10^{2}$	1.00	FALSE
878	64-18-6	Formic acid	$5.68x10^{3}$	$7.89x10^{-4}$	$9.00x10^{1}$	$1.06x10^{-1}$	FALSE
878	7722-84-1	Hydrogen peroxide (concentration> 52%)	$2.94x10^{4}$	$4.08x10^{-3}$	$1.40x10^{1}$	$1.65x10^{-2}$	FALSE
878	7783-06-4	Hydrogen sulfide	$3.66x10^{3}$	$5.08x10^{-4}$	$1.40x10^{2}$	$1.65x10^{-1}$	FALSE
878	61788-32-7	Hydrogenated terphenyls	$3.18x10^{3}$	$4.42x10^{-4}$	$4.90x10^{1}$	$5.79x10^{-2}$	FALSE
878	7440-74-6	Indium & compounds as indium	$8.80x10^{3}$	$1.22x10^{-3}$	1.00	$1.18x10^{-3}$	TRUE
878	7553-56-2	Iodine	$7.00x10^{2}$	$9.72x10^{-5}$	$1.00x10^{1}$	$1.18x10^{-2}$	FALSE
878	1309-37-1	Iron oxide fume (Fe_2O_3) as iron	$1.03x10^{4}$	$1.43x10^{-3}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
878	7439-89-6	Iron salts, soluble, as iron	$8.03x10^{3}$	$1.12x10^{-3}$	$1.00x10^{1}$	$1.18x10^{-2}$	FALSE
878	26952-21-6	Isoacytl alcohol	6.80	$9.45x10^{-7}$	$2.66x10^{3}$	3.14	FALSE
878	110-19-0	Isobutyl acetate	$5.10x10^{1}$	$7.08x10^{-6}$	$7.00x10^{3}$	8.26	FALSE

Table D.1–11. Projected Toxic Air Pollutant (TAP) Emissions Reduced Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	4098-71-9	Isophorone diisocyanate	1.00	1.39×10^{-7}	4.50×10^{-1}	5.31×10^{-4}	FALSE
878	67-63-0	Isopropyl alcohol	2.21×10^{5}	3.07×10^{-2}	4.90×10^{3}	5.79	FALSE
878	1309-48-4	Magnesium oxide	1.18×10^{3}	1.63×10^{-4}	6.00×10^{1}	7.08×10^{-2}	FALSE
878	5124-30-1	Methylene bis(4-cyclohexylisocyanate)	1.66×10^{2}	2.31×10^{-5}	5.40×10^{-1}	6.38×10^{-4}	FALSE
878	7439-98-7	Molybdenum as molybdenum (insoluble compounds)	1.57×10^{4}	2.18×10^{-3}	1.00×10^{2}	1.18×10^{-1}	FALSE
878	628-63-7	n-Amyl acetate	4.38×10^{2}	6.08×10^{-5}	2.60×10^{3}	3.07	FALSE
878	123-86-4	n-Butyl acetate	1.36×10^{3}	1.89×10^{-4}	7.10×10^{3}	8.38	FALSE
878	71-36-3	n-Butyl alcohol	6.74×10^{3}	9.36×10^{-4}	3.00×10^{3}	3.54	FALSE
878	2426-08-6	n-Butyl glycidyl ether (BGE)	2.72×10^{2}	3.78×10^{-5}	1.33×10^{3}	1.57	FALSE
878	142-82-5	n-Heptane	6.03×10^{2}	8.37×10^{-5}	3.50×10^{3}	4.13	FALSE
878	7697-37-2	Nitric acid	6.33×10^{4}	8.79×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	109-66-0	Pentane	3.25×10^{2}	4.51×10^{-5}	3.50×10^{3}	4.13	FALSE
878	8002-05-9	Petroleum	4.53×10^{2}	6.30×10^{-5}	3.50×10^{3}	4.13	FALSE
878	9003-53-6	Phenylethylene (styrene, monomer)	1.05×10^{2}	1.46×10^{-5}	8.50×10^{2}	1.00	FALSE
878	7664-38-2	Phosphoric acid	6.69×10^{3}	9.30×10^{-4}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	7440-06-4	Platinum metal	1.02×10^{4}	1.41×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	1310-58-3	Potassium hydroxide	2.90×10^{3}	4.03×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	71-23-8	Propyl alcohol	4.06×10^{3}	5.63×10^{-4}	4.92×10^{3}	5.81	FALSE
878	8003-34-7	Pyrethrins	2.36×10^{-1}	3.28×10^{-8}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	110-86-1	Pyridine	1.94×10^{2}	2.69×10^{-5}	1.50×10^{2}	1.77×10^{-1}	FALSE
878	14808-60-7	Quartz	4.02×10^{3}	5.59×10^{-4}	5.00×10^{-1}	5.90×10^{-4}	FALSE
878	78-92-2	sec-Butyl alcohol	1.34×10^{3}	1.86×10^{-4}	3.00×10^{3}	3.54	FALSE

Table D.1–11. Projected Toxic Air Pollutant (TAP) Emissions Reduced Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
878	7631-86-9	Silica, fused (respirable)	6.46×10^{3}	8.97×10^{-4}	5.00×10^{-1}	5.90×10^{-4}	TRUE
878	7440-22-4	Silver metal	1.40×10^{4}	1.95×10^{-3}	1.00×10^{-1}	1.18×10^{-4}	TRUE
878	7631-90-5	Sodium bisulfite	5.00×10^{2}	6.94×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	1310-73-2	Sodium hydroxide	4.87×10^{2}	6.77×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	8052-41-3	Stoddard solvent	2.27×10^{2}	3.15×10^{-5}	3.50×10^{3}	4.13	FALSE
878	7664-93-9	Sulfuric acid	2.18×10^{2}	3.02×10^{-5}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	75-65-0	t-Butyl alcohol	3.40	4.72×10^{-7}	3.00×10^{3}	3.54	FALSE
878	7440-25-7	Tantalum	1.04×10^{3}	1.44×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	26140-60-3	Terphenyls	4.77×10^{2}	6.62×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	109-99-9	Tetrahydrofuran	4.23×10^{2}	5.87×10^{-5}	1.50×10^{3}	1.77	FALSE
878	7722-88-5	Tetrasodium pyrophosphate	1.50	2.08×10^{-7}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	7440-31-5	Tin metal	1.37×10^{4}	1.91×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	91-08-7	Toluene-2,6-diisocyanate	2.04×10^{1}	2.83×10^{-6}	7.00×10^{-1}	8.26×10^{-4}	FALSE
878	7440-33-7	Tungsten as Wolfram insoluble compounds	2.74×10^{4}	3.81×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	7440-62-2	Vanadium (fume or dust)	2.18×10^{4}	3.03×10^{-3}	5.00×10^{-1}	5.90×10^{-4}	TRUE
878	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	2.75×10^{-1}	3.82×10^{-8}	3.50×10^{3}	4.13	FALSE
878	7440-66-6	Zinc	9.64	1.34×10^{-6}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	1314-13-2	Zinc oxide	1.14×10^{2}	1.58×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
893	67-64-1	Acetone	4.68×10^{5}	6.50×10^{-2}	5.90×10^{3}	6.97	FALSE
893	7726-95-6	Bromine	1.55×10^{2}	2.16×10^{-5}	6.60	7.79×10^{-3}	FALSE
893	7722-84-1	Hydrogen peroxide (concentration> 52%)	1.30×10^{4}	1.80×10^{-3}	1.40×10^{1}	1.65×10^{-2}	FALSE
893	67-63-0	Isopropyl alcohol	1.77×10^{5}	2.46×10^{-2}	4.90×10^{3}	5.79	FALSE
893	7697-37-2	Nitric acid	1.36×10^{4}	1.89×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE

Table D.1–11. Projected Toxic Air Pollutant (TAP) Emissions Reduced Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
893	1310-58-3	Potassium hydroxide	2.04×10^{3}	2.84×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
893	7664-93-9	Sulfuric acid	7.07×10^{4}	9.82×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
893	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	2.40×10^{3}	3.33×10^{-4}	3.50×10^{3}	4.13	FALSE
897	64-19-7	Acetic acid	4.56×10^{4}	6.33×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
897	67-64-1	Acetone	6.30×10^{4}	8.75×10^{-3}	5.90×10^{3}	6.97	FALSE
897	106-92-3	Allyl glycidyl ether	1.54×10^{1}	2.13×10^{-6}	2.20×10^{2}	2.60×10^{-1}	FALSE
897	1344-28-1	Aluminum oxide (fibrous forms)	1.38×10^{3}	1.92×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
897	128-37-0	Butylated hydroxytoluene	9.11×10^{1}	1.26×10^{-5}	1.00×10^{2}	1.18×10^{-1}	FALSE
897	420-04-2	Cyanamide	2.28×10^{1}	3.16×10^{-6}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	110-82-7	Cyclohexane	2.75	3.82×10^{-7}	7.00×10^{3}	8.26	FALSE
897	107-66-4	Dibutyl phosphate	2.50×10^{2}	3.48×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
897	124-40-3	Dimethylamine	3.66×10^{2}	5.09×10^{-5}	4.00×10^{1}	4.72×10^{-2}	FALSE
897	141-78-6	Ethyl acetate	1.64×10^{4}	2.28×10^{-3}	1.40×10^{4}	1.65×10^{1}	FALSE
897	60-29-7	Ethyl ether (diethyl ether)	2.01×10^{4}	2.79×10^{-3}	1.20×10^{4}	1.42×10^{1}	FALSE
897	78-10-4	Ethyl silicate	5.77×10^{2}	8.02×10^{-5}	8.50×10^{2}	1.00	FALSE
897	7722-84-1	Hydrogen peroxide (concentration> 52%)	2.17×10^{3}	3.02×10^{-4}	1.40×10^{1}	1.65×10^{-2}	FALSE
897	67-63-0	Isopropyl alcohol	7.15×10^{4}	9.93×10^{-3}	4.90×10^{3}	5.79	FALSE
897	8008-20-6	Kerosene	2.77×10^{3}	3.85×10^{-4}	1.00×10^{3}	1.18	FALSE
897	126-98-7	Methacrylonitrile	7.31×10^{1}	1.02×10^{-5}	2.70×10^{1}	3.19×10^{-2}	FALSE
897	681-84-5	Methyl silicate	2.06×10^{2}	2.87×10^{-5}	6.00×10^{1}	7.08×10^{-2}	FALSE
897	71-36-3	n-Butyl alcohol	1.45×10^{2}	2.01×10^{-5}	3.00×10^{3}	3.54	FALSE
897	142-82-5	n-Heptane	4.98×10^{3}	6.92×10^{-4}	3.50×10^{3}	4.13	FALSE
897	7697-37-2	Nitric acid	1.47×10^{1}	2.04×10^{-6}	5.00×10^{1}	5.90×10^{-2}	FALSE

Table D.1–11. Projected Toxic Air Pollutant (TAP) Emissions Reduced Operations Alternative Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
897	144-62-7	Oxalic acid	3.61×10^{3}	5.01×10^{-4}	1.00×10^{1}	1.18×10^{-2}	FALSE
897	109-66-0	Pentane	1.76×10^{3}	2.44×10^{-4}	3.50×10^{3}	4.13	FALSE
897	9003-53-6	Phenlylethylene (styrene, monomer)	7.36×10^{-1}	1.02×10^{-7}	8.50×10^{2}	1.00	FALSE
897	88-89-1	Picric acid (2,4,6-trinitrophenol)	9.15	1.27×10^{-6}	1.00	1.18×10^{-3}	FALSE
897	1310-58-3	Potassium hydroxide	8.55×10^{3}	1.19×10^{-3}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	71-23-8	Propyl alcohol	2.74×10^{4}	3.81×10^{-3}	4.92×10^{3}	5.81	FALSE
897	7440-22-4	Silver metal	1.55×10^{1}	2.15×10^{-6}	1.00×10^{-1}	1.18×10^{-4}	FALSE
897	1310-73-2	Sodium hydroxide	4.60×10^{2}	6.39×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE
897	7664-93-9	Sulfuric acid	7.13×10^{3}	9.90×10^{-4}	1.00×10^{1}	1.18×10^{-2}	FALSE
897	109-99-9	Tetrahydrofuran	1.07×10^{4}	1.49×10^{-3}	1.50×10^{3}	1.77	FALSE
897	7719-09-7	Thionyl chloride	4.50×10^{3}	6.25×10^{-4}	4.90×10^{1}	5.79×10^{-2}	FALSE
897	76-03-9	Trichloroacetic acid	4.60×10^{2}	6.39×10^{-5}	6.70×10^{1}	7.91×10^{-2}	FALSE
905	67-64-1	Acetone	2.81×10^{3}	3.90×10^{-4}	5.90×10^{3}	6.97	FALSE
905	67-63-0	Isopropyl alcohol	2.47×10^{3}	3.44×10^{-4}	4.90×10^{3}	5.79	FALSE
905	1309-48-4	Magnesium oxide	1.60×10^{2}	2.22×10^{-5}	6.00×10^{1}	7.08×10^{-2}	FALSE
905	109-99-9	Tetrahydrofuran	6.69×10^{2}	9.29×10^{-5}	1.50×10^{3}	1.77	FALSE
963	67-63-0	Isopropyl alcohol	1.57×10^{2}	2.18×10^{-5}	4.90×10^{3}	5.79	FALSE
981	67-64-1	Acetone	2.09×10^{3}	2.91×10^{-4}	5.90×10^{3}	6.97	FALSE
981	7664-93-9	Sulfuric acid	3.28×10^{4}	4.56×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
986	67-64-1	Acetone	1.50×10^{3}	2.08×10^{-4}	5.90×10^{3}	6.97	FALSE

Table D.1–12. 1996 Annual Purchases of Volatile Organic Compounds (VOCs) Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
605	64-17-5	Ethanol	$4.54x10^{2}$	$6.30x10^{-5}$	$1.88x10^{4}$	$2.22x10^{1}$	FALSE
605	79-09-4	Propionic acid	$1.03x10^{2}$	$1.43x10^{-5}$	$3.00x10^{2}$	$3.54x10^{-1}$	FALSE
6580	64-17-5	Ethanol	$2.97x10^{1}$	$4.12x10^{-6}$	$1.88x10^{4}$	$2.22x10^{1}$	FALSE
6580	141-78-6	Ethyl acetate	$3.60x10^{3}$	$5.00x10^{-4}$	$1.40x10^{4}$	$1.65x10^{1}$	FALSE
858	64-19-7	Acetic acid	$3.22x10^{4}$	$4.48x10^{-3}$	$2.50x10^{2}$	$2.95x10^{-1}$	FALSE
858	107-83-5	Isohexanes	$1.40x10^{3}$	$1.94x10^{-4}$	$3.50x10^{3}$	4.13	FALSE
858	108-65-6	Methoxy acetate	$5.94x10^{4}$	$8.25x10^{-3}$	$2.75x10^{3}$	3.25	FALSE
870	872-50-4	1-Methyl-2-Pyrrolidinone	$4.99x10^{3}$	$6.93x10^{-4}$	$8.00x10^{2}$	$9.45x10^{-1}$	FALSE
870	100-51-6	Alcohol, Benzyl	$2.63x10^{5}$	$3.65x10^{-2}$	No OEL		
870	64-17-5	Alcohol, Ethyl	$1.03x10^{7}$	1.43	$1.88x10^{4}$	$2.22x10^{1}$	FALSE
878	110-71-4	1,2-Dimethoxyethane	$7.18x10^{2}$	$9.97x10^{-5}$	No OEL		
878	142-96-1	1-Butoxybutane, butyl ether	$6.53x10^{2}$	$9.07x10^{-5}$	No OEL		
878	90-72-2	2,4,6-Tri(dimethylaminomethyl) phenol	$2.69x10^{3}$	$3.74x10^{-4}$	No OEL		
878	112-34-5	2-Butyl oxyethanol dipropylene glycol	$3.94x10^{4}$	$5.47x10^{-3}$	$1.00x10^{3}$	1.18	FALSE
878	111-15-9	2-Ethoxyethyl acetate	$8.53x10^{3}$	$1.18x10^{-3}$	$2.70x10^{1}$	$3.19x10^{-2}$	FALSE
878	64-19-7	Acetic acid	$1.28x10^{4}$	$1.77x10^{-3}$	$2.50x10^{2}$	$2.95x10^{-1}$	FALSE
878	64742-89-8	Aliphatic petroleum distillates	$4.52x10^{3}$	$6.27x10^{-4}$	No OEL		
878	100-51-6	Benzyl alcohol	$1.25x10^{4}$	$1.74x10^{-3}$	No OEL		
878	111-76-2	Butyl cellosolve (R)	$5.97x10^{3}$	$8.29x10^{-4}$	$2.40x10^{2}$	$2.83x10^{-1}$	FALSE
878	76-22-2	Camphor	$7.44x10^{1}$	$1.03x10^{-5}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
878	76-12-0	Chlorofluorocarbon-112	$1.25x10^{2}$	$1.74x10^{-5}$	$1.69x10^{4}$	$2.00x10^{1}$	FALSE
878	110-82-7	Cyclohexane	$3.40x10^{2}$	$4.73x10^{-5}$	$7.00x10^{3}$	8.26	FALSE

Table D.1–12. 1996 Annual Purchases of Volatile Organic Compounds (VOCs) Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
878	108-93-0	Cyclohexanol	8.00	1.11×10^{-6}	2.00×10^{3}	2.36	FALSE
878	108-91-8	Cyclohexylamine	1.83×10^{4}	2.54×10^{-3}	4.00×10^{2}	4.72×10^{-1}	FALSE
878	124-18-5	Decane	3.50×10^{2}	4.86×10^{-5}	No OEL		
878	115-10-6	Dimethyl ether	9.17×10^{2}	1.27×10^{-4}	1.91×10^{4}	2.26×10^{1}	FALSE
878	67-68-5	Dimethylsulfoxide	4.40×10^{3}	6.11×10^{-4}	No OEL		
878	109-87-5	Dimethyoxymethane (methylal)	3.40	4.72×10^{-7}	3.10×10^{4}	3.66×10^{1}	FALSE
878	2807-30-9	Ektasolve ep	2.27×10^{1}	3.15×10^{-6}	8.50×10^{2}	1.00	FALSE
878	64-17-5	Ethanol	8.84×10^{4}	1.23×10^{-2}	1.88×10^{4}	2.22×10^{1}	FALSE
878	141-78-6	Ethyl acetate	4.88×10^{2}	6.77×10^{-5}	1.40×10^{4}	1.65×10^{1}	FALSE
878	78-10-4	Ethyl silicate	4.79×10^{2}	6.65×10^{-5}	8.50×10^{2}	1.00	FALSE
878	74-85-1	Ethylene	5.17×10^{4}	7.18×10^{-3}	No OEL		
878	64-18-6	Formic acid	5.68×10^{3}	7.89×10^{-4}	9.00×10^{1}	1.06×10^{-1}	FALSE
878	75-28-5	Isobutane	1.71×10^{3}	2.37×10^{-4}	1.90×10^{4}	2.24×10^{1}	FALSE
878	110-19-0	Isobutyl acetate	5.10×10^{1}	7.08×10^{-6}	7.00×10^{3}	8.26	FALSE
878	67-63-0	Isopropyl alcohol	2.21×10^{5}	3.07×10^{-2}	4.90×10^{3}	5.79	FALSE
878	64742-88-7	Medium aliphatic solvent naphtha	2.61×10^{2}	3.62×10^{-5}	No OEL		
878	108-65-6	Methoxy acetate	5.30×10^{2}	7.37×10^{-5}	2.75×10^{3}	3.25	FALSE
878	4253-34-3	Methyltriacetoxy silane	7.26×10^{1}	1.01×10^{-5}	No OEL		
878	1185-55-3	Methyltrimethoysilane	8.69×10^{1}	1.21×10^{-5}	No OEL		
878	628-63-7	n-Amyl acetate	4.38×10^{2}	6.08×10^{-5}	2.60×10^{3}	3.07	FALSE
878	106-97-8	n-Butane	1.91×10^{2}	2.66×10^{-5}	1.90×10^{4}	2.24×10^{1}	FALSE
878	123-86-4	n-Butyl acetate	1.36×10^{3}	1.89×10^{-4}	7.10×10^{3}	8.38	FALSE

Table D.1–12. 1996 Annual Purchases of Volatile Organic Compounds (VOCs) Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
878	71-23-8	n-Butyl alcohol	$6.74x10^{3}$	$9.36x10^{-4}$	$3.00x10^{3}$	3.54	FALSE
878	2426-08-6	n-Butyl glycidyl ether (BGE)	$2.72x10^{2}$	$3.78x10^{-5}$	$1.33x10^{3}$	1.57	FALSE
878	142-82-5	n-Heptane	$6.03x10^{2}$	$8.37x10^{-5}$	$3.50x10^{3}$	4.13	FALSE
878	872-50-4	N-Methyl-2-pyrrolidone	$3.70x10^{4}$	$5.13x10^{-3}$	$8.00x10^{2}$	$9.45x10^{-1}$	FALSE
878	109-66-0	Pentane	$3.25x10^{2}$	$4.51x10^{-5}$	$3.50x10^{3}$	4.13	FALSE
878	8002-05-9	Petroleum	$4.53x10^{2}$	$6.30x10^{-5}$	No OEL		
878	64742-47-8	Petroleum distillate	$1.73x10^{3}$	$2.40x10^{-4}$	$3.50x10^{3}$	4.13	FALSE
878	9003-53-6	Phenlylethylene (styrene, monomer)	$1.05x10^{2}$	$1.46x10^{-5}$	$8.50x10^{2}$	1.00	FALSE
878	9036-19-5	Poly(oxy-1,2-ethandiyl)	5.03	$6.99x10^{-7}$	No OEL		
878	74-98-6	Propane	$2.13x10^{3}$	$2.95x10^{-4}$	$1.80x10^{4}$	$2.13x10^{1}$	FALSE
878	71-23-8	Propyl alcohol	$4.06x10^{3}$	$5.63x10^{-4}$	$4.92x10^{3}$	5.81	FALSE
878	57-55-6	Propylene gylcol	$3.29x10^{2}$	$4.57x10^{-5}$	No OEL		
878	110-86-1	Pyridine	$1.94x10^{2}$	$2.69x10^{-5}$	$1.50x10^{2}$	$1.77x10^{-1}$	FALSE
878	78-92-2	sec-Butyl alcohol	$1.34x10^{3}$	$1.86x10^{-4}$	$3.00x10^{3}$	3.54	FALSE
878	8052-41-3	Stoddard solvent	$2.27x10^{2}$	$3.15x10^{-5}$	$3.50x10^{3}$	4.13	FALSE
878	75-65-0	t-Butyl alcohol	3.40	$4.72x10^{-7}$	$3.00x10^{3}$	3.54	FALSE
878	26140-60-3	Terphenyls	$4.77x10^{2}$	$6.62x10^{-5}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
878	109-99-9	Tetrahydrofuran	$4.23x10^{2}$	$5.87x10^{-5}$	$1.50x10^{3}$	1.77	FALSE
878	546-68-9	Titanium isopropoxides	$7.09x10^{1}$	$9.84x10^{-6}$	No OEL		
878	26471-62-5	Toluene diisocyanate	$2.95x10^{3}$	$4.10x10^{-4}$	No OEL		
878	91-08-7	Toluene-2,6-diisocyanate	$2.04x10^{1}$	$2.83x10^{-6}$	$7.00x10^{-1}$	$8.26x10^{-4}$	FALSE
878	102-71-6	Triethanolamine	$2.68x10^{1}$	$3.72x10^{-6}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE

Table D.1–12. 1996 Annual Purchases of Volatile Organic Compounds (VOCs) Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
878	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	$2.75x10^{-1}$	$3.82x10^{-8}$	$3.50x10^{3}$	4.13	FALSE
893	67-68-5	Dimethylsulfoxide	$2.20x10^{3}$	$3.06x10^{-4}$	No OEL		
893	64-17-5	Ethanol	$3.92x10^{3}$	$5.44x10^{-4}$	$1.88x10^{4}$	$2.22x10^{1}$	FALSE
893	67-63-0	Isopropyl alcohol	$1.77x10^{5}$	$2.46x10^{-2}$	$4.90x10^{3}$	5.79	FALSE
893	108-65-6	Methoxy acetate	$8.20x10^{3}$	$1.14x10^{-3}$	$2.75x10^{3}$	3.25	FALSE
893	872-50-4	N-Methyl-2-pyrrolidone	$8.21x10^{3}$	$1.14x10^{-3}$	$8.00x10^{2}$	$9.45x10^{-1}$	FALSE
893	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	$2.40x10^{3}$	$3.33x10^{-4}$	$3.50x10^{3}$	4.13	FALSE
897	764-41-0	1,4-Dichloro-2-butene	$4.90x10^{1}$	$6.81x10^{-6}$	$2.50x10^{-1}$	$2.95x10^{-4}$	FALSE
897	64-19-7	Acetic acid	$4.95x10^{4}$	$6.88x10^{-3}$	$2.50x10^{2}$	$2.95x10^{-1}$	FALSE
897	75-36-5	Acetyl chloride	$1.53x10^{3}$	$2.13x10^{-4}$	No OEL		
897	106-92-3	Allyl glycidyl ether	$1.67x10^{1}$	$2.32x10^{-6}$	$2.20x10^{2}$	$2.60x10^{-1}$	FALSE
897	100-51-6	Benzyl alcohol	$5.21x10^{2}$	$7.24x10^{-5}$	No OEL		
897	128-37-0	Butylated hydroxytoluene	$9.90x10^{1}$	$1.37x10^{-5}$	$1.00x10^{2}$	$1.18x10^{-1}$	FALSE
897	110-82-7	Cyclohexane	2.99	$4.15x10^{-7}$	$7.00x10^{3}$	8.26	FALSE
897	124-40-3	Dimethylamine	$3.98x10^{2}$	$5.53x10^{-5}$	$4.00x10^{1}$	$4.72x10^{-2}$	FALSE
897	67-68-5	Dimethylsulfoxide	$1.12x10^{3}$	$1.56x10^{-4}$	No OEL		
897	64-17-5	Ethanol	$8.36x10^{1}$	$1.16x10^{-5}$	$1.88x10^{4}$	$2.22x10^{1}$	FALSE
897	141-78-6	Ethyl acetate	$1.78x10^{4}$	$2.47x10^{-3}$	$1.40x10^{4}$	$1.65x10^{1}$	FALSE
897	60-29-7	Ethyl ether (diethyl ether)	$2.18x10^{4}$	$3.03x10^{-3}$	$1.20x10^{4}$	$1.42x10^{1}$	FALSE
897	78-10-4	Ethyl silicate	$6.27x10^{2}$	$8.72x10^{-5}$	$8.50x10^{2}$	1.00	FALSE
897	107-83-5	Isohexanes	$1.41x10^{4}$	$1.96x10^{-3}$	$3.50x10^{3}$	4.13	FALSE

Table D.1–12. 1996 Annual Purchases of Volatile Organic Compounds (VOCs) Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
897	67-63-0	Isopropyl alcohol	7.77×10^{4}	1.08×10^{-2}	4.90×10^{3}	5.79	FALSE
897	8008-20-6	Kerosene	3.01×10^{3}	4.18×10^{-4}	1.00×10^{3}	1.18	FALSE
897	126-98-7	Methacrylonitrile	7.95×10^{1}	1.10×10^{-5}	2.70×10^{1}	3.19×10^{-2}	FALSE
897	55-55-0	Methal amino phenol sulphate	4.11×10^{2}	5.70×10^{-5}	No OEL		
897	75-79-6	Methyltrichlorosilane	6.40×10^{2}	8.89×10^{-5}	No OEL		
897	71-23-8	n-Butyl alcohol	1.57×10^{2}	2.19×10^{-5}	3.00×10^{3}	3.54	FALSE
897	142-82-5	n-Heptane	5.42×10^{3}	7.52×10^{-4}	3.50×10^{3}	4.13	FALSE
897	109-66-0	Pentane	1.91×10^{3}	2.66×10^{-4}	3.50×10^{3}	4.13	FALSE
897	79-21-0	Peracetic acid	5.65×10^{1}	7.85×10^{-6}	No OEL		
897	9003-53-6	Phenlylethylene (styrene, monomer)	8.00×10^{-1}	1.11×10^{-7}	8.50×10^{2}	1.00	FALSE
897	71-23-8	Propyl alcohol	2.98×10^{4}	4.14×10^{-3}	4.92×10^{3}	5.81	FALSE
897	109-99-9	Tetrahydrofuran	1.17×10^{4}	1.62×10^{-3}	1.50×10^{3}	1.77	FALSE
897	998-30-1	Triethoxysilane	4.23×10^{2}	5.87×10^{-5}	No OEL		
905	64-17-5	Ethanol	5.76×10^{3}	8.00×10^{-4}	1.88×10^{4}	2.22×10^{1}	FALSE
905	67-63-0	Isopropyl alcohol	1.24×10^{4}	1.72×10^{-3}	4.90×10^{3}	5.79	FALSE
905	109-99-9	Tetrahydrofuran	3.34×10^{3}	4.64×10^{-4}	1.50×10^{3}	1.77	FALSE
963	67-63-0	Isopropyl alcohol	7.85×10^{2}	1.09×10^{-4}	4.90×10^{3}	5.79	FALSE

Table D.1–13. Projected Volatile Organic Compound (VOC) Emissions No Action Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
605	64-17-5	Ethanol	4.54×10^{2}	6.30×10^{-5}	1.88×10^{4}	2.22×10^{1}	FALSE
605	79-09-4	Propionic acid	1.03×10^{2}	1.43×10^{-5}	3.00×10^{2}	3.54×10^{-1}	FALSE
6580	64-17-5	Ethanol	2.97×10^{1}	4.12×10^{-6}	1.88×10^{4}	2.22×10^{1}	FALSE
6580	141-78-6	Ethyl acetate	3.60×10^{3}	5.00×10^{-4}	1.40×10^{4}	1.65×10^{1}	FALSE
858	64-19-7	Acetic acid	5.64×10^{4}	7.83×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
858	107-83-5	Isohexanes	2.45×10^{3}	3.40×10^{-4}	3.50×10^{3}	4.13	FALSE
858	108-65-6	Methoxy acetate	1.04×10^{5}	1.44×10^{-2}	2.75×10^{3}	3.25	FALSE
870	872-50-4	1-Methyl-2-Pyrrolidinone	1.54×10^{4}	2.14×10^{-3}	8.00×10^{2}	9.45×10^{-1}	FALSE
870	100-51-6	Alcohol, Benzyl	7.89×10^{5}	1.10×10^{-1}	No OEL		
870	64-17-5	Alcohol, Ethyl	3.08×10^{7}	4.28	1.88×10^{4}	2.22×10^{1}	FALSE
878	110-71-4	1,2-Dimethoxyethane	1.08×10^{3}	1.50×10^{-4}	No OEL		
878	142-96-1	1-Butoxybutane, butyl ether	9.80×10^{2}	1.36×10^{-4}	No OEL		
878	90-72-2	2,4,6-Tri(dimethylaminomethyl) phenol	4.04×10^{3}	5.61×10^{-4}	No OEL		
878	112-34-5	2-Butyl oxyethanol dipropylene glycol	5.90×10^{4}	8.20×10^{-3}	1.00×10^{3}	1.18	FALSE
878	111-15-9	2-Ethoxyethyl acetate	1.28×10^{4}	1.78×10^{-3}	2.70×10^{1}	3.19×10^{-2}	FALSE
878	64-19-7	Acetic acid	1.92×10^{4}	2.66×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
878	64742-89-8	Aliphatic petroleum distillates	6.78×10^{3}	9.41×10^{-4}	No OEL		
878	100-51-6	Benzyl alcohol	1.88×10^{4}	2.60×10^{-3}	No OEL		
878	111-76-2	Butyl cellosolve (R)	8.95×10^{3}	1.24×10^{-3}	2.40×10^{2}	2.83×10^{-1}	FALSE
878	76-22-2	Camphor	1.12×10^{2}	1.55×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	76-12-0	Chlorofluorocarbon-112	1.87×10^{2}	2.60×10^{-5}	1.69×10^{4}	2.00×10^{1}	FALSE
878	110-82-7	Cyclohexane	5.11×10^{2}	7.09×10^{-5}	7.00×10^{3}	8.26	FALSE

Table D.1–13. Projected Volatile Organic Compound (VOC) Emissions No Action Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
878	108-93-0	Cyclohexanol	1.20×10^{1}	1.67×10^{-6}	2.00×10^{3}	2.36	FALSE
878	108-91-8	Cyclohexylamine	2.74×10^{4}	3.81×10^{-3}	4.00×10^{2}	4.72×10^{-1}	FALSE
878	124-18-5	Decane	5.25×10^{2}	7.29×10^{-5}	No OEL		
878	115-10-6	Dimethyl ether	1.38×10^{3}	1.91×10^{-4}	1.91×10^{4}	2.26×10^{1}	FALSE
878	67-68-5	Dimethylsulfoxide	6.60×10^{3}	9.17×10^{-4}	No OEL		
878	109-87-5	Dimethyoxymethane (methylal)	5.10	7.09×10^{-7}	3.10×10^{4}	3.66×10^{1}	FALSE
878	2807-30-9	Ektasolve ep	3.40×10^{1}	4.72×10^{-6}	8.50×10^{2}	1.00	FALSE
878	64-17-5	Ethanol	1.33×10^{5}	1.84×10^{-2}	1.88×10^{4}	2.22×10^{1}	FALSE
878	141-78-6	Ethyl acetate	7.32×10^{2}	1.02×10^{-4}	1.40×10^{4}	1.65×10^{1}	FALSE
878	78-10-4	Ethyl silicate	7.18×10^{2}	9.97×10^{-5}	8.50×10^{2}	1.00	FALSE
878	74-85-1	Ethylene	7.76×10^{4}	1.08×10^{-2}	No OEL		
878	64-18-6	Formic acid	8.52×10^{3}	1.18×10^{-3}	9.00×10^{1}	1.06×10^{-1}	FALSE
878	75-28-5	Isobutane	2.56×10^{3}	3.55×10^{-4}	1.90×10^{4}	2.24×10^{1}	FALSE
878	110-19-0	Isobutyl acetate	7.64×10^{1}	1.06×10^{-5}	7.00×10^{3}	8.26	FALSE
878	67-63-0	Isopropyl alcohol	3.32×10^{5}	4.61×10^{-2}	4.90×10^{3}	5.79	FALSE
878	64742-88-7	Medium aliphatic solvent naphtha	3.91×10^{2}	5.43×10^{-5}	No OEL		
878	108-65-6	Methoxy acetate	7.96×10^{2}	1.11×10^{-4}	2.75×10^{3}	3.25	FALSE
878	4253-34-3	Methyltriacetoxy silane	1.09×10^{2}	1.51×10^{-5}	No OEL		
878	1185-55-3	Methyltrimethoysilane	1.30×10^{2}	1.81×10^{-5}	No OEL		
878	628-63-7	n-Amyl acetate	6.57×10^{2}	9.12×10^{-5}	2.60×10^{3}	3.07	FALSE
878	106-97-8	n-Butane	2.87×10^{2}	3.99×10^{-5}	1.90×10^{4}	2.24×10^{1}	FALSE
878	123-86-4	n-Butyl acetate	2.05×10^{3}	2.84×10^{-4}	7.10×10^{3}	8.38	FALSE

Table D.1–13. Projected Volatile Organic Compound (VOC) Emissions No Action Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
878	71-23-8	n-Butyl alcohol	1.01×10^{4}	1.40×10^{-3}	3.00×10^{3}	3.54	FALSE
878	2426-08-6	n-Butyl glycidyl ether (BGE)	4.08×10^{2}	5.67×10^{-5}	1.33×10^{3}	1.57	FALSE
878	142-82-5	n-Heptane	9.04×10^{2}	1.26×10^{-4}	3.50×10^{3}	4.13	FALSE
878	872-50-4	N-Methyl-2-pyrrolidone	5.54×10^{4}	7.70×10^{-3}	8.00×10^{2}	9.45×10^{-1}	FALSE
878	109-66-0	Pentane	4.87×10^{2}	6.76×10^{-5}	3.50×10^{3}	4.13	FALSE
878	8002-05-9	Petroleum	6.80×10^{2}	9.44×10^{-5}	No OEL		
878	64742-47-8	Petroleum distillate	2.60×10^{3}	3.61×10^{-4}	3.50×10^{3}	4.13	FALSE
878	9003-53-6	Phenlylethylene (styrene, monomer)	1.57×10^{2}	2.19×10^{-5}	8.50×10^{2}	1.00	FALSE
878	9036-19-5	Poly(oxy-1,2-ethandiyl)	7.54	1.05×10^{-6}	No OEL		
878	74-98-6	Propane	3.19×10^{3}	4.43×10^{-4}	1.80×10^{4}	2.13×10^{1}	FALSE
878	71-23-8	Propyl alcohol	6.08×10^{3}	8.45×10^{-4}	4.92×10^{3}	5.81	FALSE
878	57-55-6	Propylene gylcol	4.94×10^{2}	6.86×10^{-5}	No OEL		
878	110-86-1	Pyridine	2.90×10^{2}	4.03×10^{-5}	1.50×10^{2}	1.77×10^{-1}	FALSE
878	78-92-2	sec-Butyl alcohol	2.01×10^{3}	2.79×10^{-4}	3.00×10^{3}	3.54	FALSE
878	8052-41-3	Stoddard solvent	3.41×10^{2}	4.73×10^{-5}	3.50×10^{3}	4.13	FALSE
878	75-65-0	t-Butyl alcohol	5.10	7.09×10^{-7}	3.00×10^{3}	3.54	FALSE
878	26140-60-3	Terphenyls	7.15×10^{2}	9.94×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	109-99-9	Tetrahydrofuran	6.34×10^{2}	8.81×10^{-5}	1.50×10^{3}	1.77	FALSE
878	546-68-9	Titanium isopropoxides	1.06×10^{2}	1.48×10^{-5}	No OEL		
878	26471-62-5	Toluene diisocyanate	4.43×10^{3}	6.15×10^{-4}	No OEL		
878	91-08-7	Toluene-2,6-diisocyanate	3.06×10^{1}	4.25×10^{-6}	7.00×10^{-1}	8.26×10^{-4}	FALSE
878	102-71-6	Triethanolamine	4.02×10^{1}	5.58×10^{-6}	5.00×10^{1}	5.90×10^{-2}	FALSE

Table D.1–13. Projected Volatile Organic Compound (VOC) Emissions No Action Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
878	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	4.12×10^{-1}	5.73×10^{-8}	3.50×10^{3}	4.13	FALSE
893	67-68-5	Dimethylsulfoxide	2.20×10^{3}	3.06×10^{-4}	No OEL		
893	64-17-5	Ethanol	3.92×10^{3}	5.44×10^{-4}	1.88×10^{4}	2.22×10^{1}	FALSE
893	67-63-0	Isopropyl alcohol	1.77×10^{5}	2.46×10^{-2}	4.90×10^{3}	5.79	FALSE
893	108-65-6	Methoxy acetate	8.20×10^{3}	1.14×10^{-3}	2.75×10^{3}	3.25	FALSE
893	872-50-4	N-Methyl-2-pyrrolidone	8.21×10^{3}	1.14×10^{-3}	8.00×10^{2}	9.45×10^{-1}	FALSE
893	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	2.40×10^{3}	3.33×10^{-4}	3.50×10^{3}	4.13	FALSE
897	764-41-0	1,4-Dichloro-2-butene	4.90×10^{1}	6.81×10^{-6}	2.50×10^{-1}	2.95×10^{-4}	FALSE
897	64-19-7	Acetic acid	4.95×10^{4}	6.88×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
897	75-36-5	Acetyl chloride	1.53×10^{3}	2.13×10^{-4}	No OEL		
897	106-92-3	Allyl glycidyl ether	1.67×10^{1}	2.32×10^{-6}	2.20×10^{2}	2.60×10^{-1}	FALSE
897	100-51-6	Benzyl alcohol	5.21×10^{2}	7.24×10^{-5}	No OEL		
897	128-37-0	Butylated hydroxytoluene	9.90×10^{1}	1.37×10^{-5}	1.00×10^{2}	1.18×10^{-1}	FALSE
897	110-82-7	Cyclohexane	2.99	4.15×10^{-7}	7.00×10^{3}	8.26	FALSE
897	124-40-3	Dimethylamine	3.98×10^{2}	5.53×10^{-5}	4.00×10^{1}	4.72×10^{-2}	FALSE
897	67-68-5	Dimethylsulfoxide	1.12×10^{3}	1.56×10^{-4}	No OEL		
897	64-17-5	Ethanol	8.36×10^{1}	1.16×10^{-5}	1.88×10^{4}	2.22×10^{1}	FALSE
897	141-78-6	Ethyl acetate	1.78×10^{4}	2.47×10^{-3}	1.40×10^{4}	1.65×10^{1}	FALSE
897	60-29-7	Ethyl ether (diethyl ether)	2.18×10^{4}	3.03×10^{-3}	1.20×10^{4}	1.42×10^{1}	FALSE
897	78-10-4	Ethyl silicate	6.27×10^{2}	8.72×10^{-5}	8.50×10^{2}	1.00	FALSE
897	107-83-5	Isohexanes	1.41×10^{4}	1.96×10^{-3}	3.50×10^{3}	4.13	FALSE
897	67-63-0	Isopropyl alcohol	7.77×10^{4}	1.08×10^{-2}	4.90×10^{3}	5.79	FALSE

Table D.1–13. Projected Volatile Organic Compound (VOC) Emissions No Action Alternative Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
897	8008-20-6	Kerosene	3.01×10^{3}	4.18×10^{-4}	1.00×10^{3}	1.18	FALSE
897	126-98-7	Methacrylonitrile	7.95×10^{1}	1.10×10^{-5}	2.70×10^{1}	3.19×10^{-2}	FALSE
897	55-55-0	Methal amino phenol sulphate	4.11×10^{2}	5.70×10^{-5}	No OEL		
897	75-79-6	Methyltrichlorosilane	6.40×10^{2}	8.89×10^{-5}	No OEL		
897	71-23-8	n-Butyl alcohol	1.57×10^{2}	2.19×10^{-5}	3.00×10^{3}	3.54	FALSE
897	142-82-5	n-Heptane	5.42×10^{3}	7.52×10^{-4}	3.50×10^{3}	4.13	FALSE
897	109-66-0	Pentane	1.91×10^{3}	2.66×10^{-4}	3.50×10^{3}	4.13	FALSE
897	79-21-0	Peracetic acid	5.65×10^{1}	7.85×10^{-6}	No OEL		
897	9003-53-6	Phenlylethylene (styrene, monomer)	8.00×10^{-1}	1.11×10^{-7}	8.50×10^{2}	1.00	FALSE
897	71-23-8	Propyl alcohol	2.98×10^{4}	4.14×10^{-3}	4.92×10^{3}	5.81	FALSE
897	109-99-9	Tetrahydrofuran	1.17×10^{4}	1.62×10^{-3}	1.50×10^{3}	1.77	FALSE
897	998-30-1	Triethoxysilane	4.23×10^{2}	5.87×10^{-5}	No OEL		
905	64-17-5	Ethanol	1.15×10^{4}	1.60×10^{-3}	1.88×10^{4}	2.22×10^{1}	FALSE
905	67-63-0	Isopropyl alcohol	2.47×10^{4}	3.44×10^{-3}	4.90×10^{3}	5.79	FALSE
905	109-99-9	Tetrahydrofuran	6.69×10^{3}	9.29×10^{-4}	1.50×10^{3}	1.77	FALSE
963	67-63-0	Isopropyl alcohol	7.85×10^{2}	1.09×10^{-4}	4.90×10^{3}	5.79	FALSE

Table D.1–14. Projected Volatile Organic Compound (VOC) Emissions Expanded Operations Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
605	64-17-5	Ethanol	9.07×10^{2}	1.26×10^{-4}	1.88×10^{4}	2.22×10^{1}	FALSE
605	79-09-4	Propionic acid	2.06×10^{2}	2.87×10^{-5}	3.00×10^{2}	3.54×10^{-1}	FALSE
6580	64-17-5	Ethanol	5.94×10^{1}	8.25×10^{-6}	1.88×10^{4}	2.22×10^{1}	FALSE
6580	141-78-6	Ethyl acetate	7.20×10^{3}	1.00×10^{-3}	1.40×10^{4}	1.65×10^{1}	FALSE
858	64-19-7	Acetic acid	6.04×10^{4}	8.39×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
858	107-83-5	Isohexanes	2.62×10^{3}	3.65×10^{-4}	3.50×10^{3}	4.13	FALSE
858	108-65-6	Methoxy acetate	1.11×10^{5}	1.55×10^{-2}	2.75×10^{3}	3.25	FALSE
870	872-50-4	1-Methyl-2-Pyrrolidinone	1.54×10^{4}	2.14×10^{-3}	8.00×10^{2}	9.45×10^{-1}	FALSE
870	100-51-6	Alcohol, Benzyl	7.89×10^{5}	1.10×10^{-1}	No OEL		
870	64-17-5	Alcohol, Ethyl	3.08×10^{7}	4.28	1.88×10^{4}	2.22×10^{1}	FALSE
878	110-71-4	1,2-Dimethoxyethane	1.44×10^{3}	1.99×10^{-4}	No OEL		
878	142-96-1	1-Butoxybutane, butyl ether	1.31×10^{3}	1.81×10^{-4}	No OEL		
878	90-72-2	2,4,6-Tri(dimethylaminomethyl) phenol	5.38×10^{3}	7.48×10^{-4}	No OEL		
878	112-34-5	2-Butyl oxyethanol dipropylene glycol	7.87×10^{4}	1.09×10^{-2}	1.00×10^{3}	1.18	FALSE
878	111-15-9	2-Ethoxyethyl acetate	1.71×10^{4}	2.37×10^{-3}	2.70×10^{1}	3.19×10^{-2}	FALSE
878	64-19-7	Acetic acid	2.55×10^{4}	3.55×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
878	64742-89-8	Aliphatic petroleum distillates	9.04×10^{3}	1.25×10^{-3}	No OEL		
878	100-51-6	Benzyl alcohol	2.50×10^{4}	3.47×10^{-3}	No OEL		
878	111-76-2	Butyl cellosolve (R)	1.19×10^{4}	1.66×10^{-3}	2.40×10^{2}	2.83×10^{-1}	FALSE
878	76-22-2	Camphor	1.49×10^{2}	2.07×10^{-5}	2.00×10^{1}	2.36×10^{-2}	FALSE
878	76-12-0	Chlorofluorocarbon-112	2.50×10^{2}	3.47×10^{-5}	1.69×10^{4}	2.00×10^{1}	FALSE
878	110-82-7	Cyclohexane	6.81×10^{2}	9.46×10^{-5}	7.00×10^{3}	8.26	FALSE

Table D.1–14. Projected Volatile Organic Compound (VOC) Emissions Expanded Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
878	108-93-0	Cyclohexanol	1.60×10^{1}	2.22×10^{-6}	2.00×10^{3}	2.36	FALSE
878	108-91-8	Cyclohexylamine	3.65×10^{4}	5.07×10^{-3}	4.00×10^{2}	4.72×10^{-1}	FALSE
878	124-18-5	Decane	7.00×10^{2}	9.72×10^{-5}	No OEL		
878	115-10-6	Dimethyl ether	1.83×10^{3}	2.55×10^{-4}	1.91×10^{4}	2.26×10^{1}	FALSE
878	67-68-5	Dimethylsulfoxide	8.80×10^{3}	1.22×10^{-3}	No OEL		
878	109-87-5	Dimethyoxymethane (methylal)	6.80	9.45×10^{-7}	3.10×10^{4}	3.66×10^{1}	FALSE
878	2807-30-9	Ektasolve ep	4.54×10^{1}	6.30×10^{-6}	8.50×10^{2}	1.00	FALSE
878	64-17-5	Ethanol	1.77×10^{5}	2.46×10^{-2}	1.88×10^{4}	2.22×10^{1}	FALSE
878	141-78-6	Ethyl acetate	9.75×10^{2}	1.35×10^{-4}	1.40×10^{4}	1.65×10^{1}	FALSE
878	78-10-4	Ethyl silicate	9.57×10^{2}	1.33×10^{-4}	8.50×10^{2}	1.00	FALSE
878	74-85-1	Ethylene	1.03×10^{5}	1.44×10^{-2}	No OEL		
878	64-18-6	Formic acid	1.14×10^{4}	1.58×10^{-3}	9.00×10^{1}	1.06×10^{-1}	FALSE
878	75-28-5	Isobutane	3.41×10^{3}	4.74×10^{-4}	1.90×10^{4}	2.24×10^{1}	FALSE
878	110-19-0	Isobutyl acetate	1.02×10^{2}	1.42×10^{-5}	7.00×10^{3}	8.26	FALSE
878	67-63-0	Isopropyl alcohol	4.42×10^{5}	6.14×10^{-2}	4.90×10^{3}	5.79	FALSE
878	64742-88-7	Medium aliphatic solvent naphtha	5.22×10^{2}	7.24×10^{-5}	No OEL		
878	108-65-6	Methoxy acetate	1.06×10^{3}	1.47×10^{-4}	2.75×10^{3}	3.25	FALSE
878	4253-34-3	Methyltriacetoxy silane	1.45×10^{2}	2.02×10^{-5}	No OEL		
878	1185-55-3	Methyltrimethoysilane	1.74×10^{2}	2.41×10^{-5}	No OEL		
878	628-63-7	n-Amyl acetate	8.76×10^{2}	1.22×10^{-4}	2.60×10^{3}	3.07	FALSE
878	106-97-8	n-Butane	3.83×10^{2}	5.32×10^{-5}	1.90×10^{4}	2.24×10^{1}	FALSE
878	123-86-4	n-Butyl acetate	2.73×10^{3}	3.79×10^{-4}	7.10×10^{3}	8.38	FALSE

Table D.1–14. Projected Volatile Organic Compound (VOC) Emissions Expanded Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
878	71-23-8	n-Butyl alcohol	1.35×10^{4}	1.87×10^{-3}	3.00×10^{3}	3.54	FALSE
878	2426-08-6	n-Butyl glycidyl ether (BGE)	5.44×10^{2}	7.56×10^{-5}	1.33×10^{3}	1.57	FALSE
878	142-82-5	n-Heptane	1.21×10^{3}	1.67×10^{-4}	3.50×10^{3}	4.13	FALSE
878	872-50-4	N-Methyl-2-pyrrolidone	7.39×10^{4}	1.03×10^{-2}	8.00×10^{2}	9.45×10^{-1}	FALSE
878	109-66-0	Pentane	6.49×10^{2}	9.02×10^{-5}	3.50×10^{3}	4.13	FALSE
878	8002-05-9	Petroleum	9.07×10^{2}	1.26×10^{-4}	No OEL		
878	64742-47-8	Petroleum distillate	3.46×10^{3}	4.81×10^{-4}	3.50×10^{3}	4.13	FALSE
878	9003-53-6	Phenlylethylene (styrene, monomer)	2.10×10^{2}	2.92×10^{-5}	8.50×10^{2}	1.00	FALSE
878	9036-19-5	Poly(oxy-1,2-ethandiyl)	1.01×10^{1}	1.40×10^{-6}	No OEL		
878	74-98-6	Propane	4.25×10^{3}	5.91×10^{-4}	1.80×10^{4}	2.13×10^{1}	FALSE
878	71-23-8	Propyl alcohol	8.11×10^{3}	1.13×10^{-3}	4.92×10^{3}	5.81	FALSE
878	57-55-6	Propylene gylcol	6.58×10^{2}	9.14×10^{-5}	No OEL		
878	110-86-1	Pyridine	3.87×10^{2}	5.38×10^{-5}	1.50×10^{2}	1.77×10^{-1}	FALSE
878	78-92-2	sec-Butyl alcohol	2.67×10^{3}	3.71×10^{-4}	3.00×10^{3}	3.54	FALSE
878	8052-41-3	Stoddard solvent	4.54×10^{2}	6.31×10^{-5}	3.50×10^{3}	4.13	FALSE
878	75-65-0	t-Butyl alcohol	6.80	9.45×10^{-7}	3.00×10^{3}	3.54	FALSE
878	26140-60-3	Terphenyls	9.54×10^{2}	1.32×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
878	109-99-9	Tetrahydrofuran	8.46×10^{2}	1.17×10^{-4}	1.50×10^{3}	1.77	FALSE
878	546-68-9	Titanium isopropoxides	1.42×10^{2}	1.97×10^{-5}	No OEL		
878	26471-62-5	Toluene diisocyanate	5.90×10^{3}	8.20×10^{-4}	No OEL		
878	91-08-7	Toluene-2,6-diisocyanate	4.08×10^{1}	5.67×10^{-6}	7.00×10^{-1}	8.26×10^{-4}	FALSE
878	102-71-6	Triethanolamine	5.36×10^{1}	7.44×10^{-6}	5.00×10^{1}	5.90×10^{-2}	FALSE

Table D.1–14. Projected Volatile Organic Compound (VOC) Emissions Expanded Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
878	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	5.50×10^{-1}	7.64×10^{-8}	3.50×10^{3}	4.13	FALSE
893	67-68-5	Dimethylsulfoxide	4.40×10^{3}	6.11×10^{-4}	No OEL		
893	64-17-5	Ethanol	7.84×10^{3}	1.09×10^{-3}	1.88×10^{4}	2.22×10^{1}	FALSE
893	67-63-0	Isopropyl alcohol	3.54×10^{5}	4.92×10^{-2}	4.90×10^{3}	5.79	FALSE
893	108-65-6	Methoxy acetate	1.64×10^{4}	2.28×10^{-3}	2.75×10^{3}	3.25	FALSE
893	872-50-4	N-Methyl-2-pyrrolidone	1.64×10^{4}	2.28×10^{-3}	8.00×10^{2}	9.45×10^{-1}	FALSE
893	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	4.80×10^{3}	6.67×10^{-4}	3.50×10^{3}	4.13	FALSE
897	764-41-0	1,4-Dichloro-2-butene	4.90×10^{1}	6.81×10^{-6}	2.50×10^{-1}	2.95×10^{-4}	FALSE
897	64-19-7	Acetic acid	4.95×10^{4}	6.88×10^{-3}	2.50×10^{2}	2.95×10^{-1}	FALSE
897	75-36-5	Acetyl chloride	1.53×10^{3}	2.13×10^{-4}	No OEL		
897	106-92-3	Allyl glycidyl ether	1.67×10^{1}	2.32×10^{-6}	2.20×10^{2}	2.60×10^{-1}	FALSE
897	100-51-6	Benzyl alcohol	5.21×10^{2}	7.24×10^{-5}	No OEL		
897	128-37-0	Butylated hydroxytoluene	9.90×10^{1}	1.37×10^{-5}	1.00×10^{2}	1.18×10^{-1}	FALSE
897	110-82-7	Cyclohexane	2.99	4.15×10^{-7}	7.00×10^{3}	8.26	FALSE
897	124-40-3	Dimethylamine	3.98×10^{2}	5.53×10^{-5}	4.00×10^{1}	4.72×10^{-2}	FALSE
897	67-68-5	Dimethylsulfoxide	1.12×10^{3}	1.56×10^{-4}	No OEL		
897	64-17-5	Ethanol	8.36×10^{1}	1.16×10^{-5}	1.88×10^{4}	2.22×10^{1}	FALSE
897	141-78-6	Ethyl acetate	1.78×10^{4}	2.47×10^{-3}	1.40×10^{4}	1.65×10^{1}	FALSE
897	60-29-7	Ethyl ether (diethyl ether)	2.18×10^{4}	3.03×10^{-3}	1.20×10^{4}	1.42×10^{1}	FALSE
897	78-10-4	Ethyl silicate	6.27×10^{2}	8.72×10^{-5}	8.50×10^{2}	1.00	FALSE
897	107-83-5	Isohexanes	1.41×10^{4}	1.96×10^{-3}	3.50×10^{3}	4.13	FALSE
897	67-63-0	Isopropyl alcohol	7.77×10^{4}	1.08×10^{-2}	4.90×10^{3}	5.79	FALSE

Table D.1–14. Projected Volatile Organic Compound (VOC) Emissions Expanded Operations Alternative Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
897	8008-20-6	Kerosene	3.01×10^{3}	4.18×10^{-4}	1.00×10^{3}	1.18	FALSE
897	126-98-7	Methacrylonitrile	7.95×10^{1}	1.10×10^{-5}	2.70×10^{1}	3.19×10^{-2}	FALSE
897	55-55-0	Methal amino phenol sulphate	4.11×10^{2}	5.70×10^{-5}	No OEL		
897	75-79-6	Methyltrichlorosilane	6.40×10^{2}	8.89×10^{-5}	No OEL		
897	71-23-8	n-Butyl alcohol	1.57×10^{2}	2.19×10^{-5}	3.00×10^{3}	3.54	FALSE
897	142-82-5	n-Heptane	5.42×10^{3}	7.52×10^{-4}	3.50×10^{3}	4.13	FALSE
897	109-66-0	Pentane	1.91×10^{3}	2.66×10^{-4}	3.50×10^{3}	4.13	FALSE
897	79-21-0	Peracetic acid	5.65×10^{1}	7.85×10^{-6}	No OEL		
897	9003-53-6	Phenlylethylene (styrene, monomer)	8.00×10^{-1}	1.11×10^{-7}	8.50×10^{2}	1.00	FALSE
897	71-23-8	Propyl alcohol	2.98×10^{4}	4.14×10^{-3}	4.92×10^{3}	5.81	FALSE
897	109-99-9	Tetrahydrofuran	1.17×10^{4}	1.62×10^{-3}	1.50×10^{3}	1.77	FALSE
897	998-30-1	Triethoxysilane	4.23×10^{2}	5.87×10^{-5}	No OEL		
905	64-17-5	Ethanol	1.15×10^{4}	1.60×10^{-3}	1.88×10^{4}	2.22×10^{1}	FALSE
905	67-63-0	Isopropyl alcohol	2.47×10^{4}	3.44×10^{-3}	4.90×10^{3}	5.79	FALSE
905	109-99-9	Tetrahydrofuran	6.69×10^{3}	9.29×10^{-4}	1.50×10^{3}	1.77	FALSE
963	67-63-0	Isopropyl alcohol	1.57×10^{3}	2.18×10^{-4}	4.90×10^{3}	5.79	FALSE

Table D.1–15. Projected Volatile Organic Compound (VOC) Emissions Reduced Operations Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
605	64-17-5	Ethanol	$4.54x10^{2}$	$6.30x10^{-5}$	$1.88x10^{4}$	$2.22x10^{1}$	FALSE
605	79-09-4	Propionic acid	$1.03x10^{2}$	$1.43x10^{-5}$	$3.00x10^{2}$	$3.54x10^{-1}$	FALSE
6580	64-17-5	Ethanol	$2.97x10^{1}$	$4.12x10^{-6}$	$1.88x10^{4}$	$2.22x10^{1}$	FALSE
6580	141-78-6	Ethyl acetate	$3.60x10^{3}$	$5.00x10^{-4}$	$1.40x10^{4}$	$1.65x10^{1}$	FALSE
858	64-19-7	Acetic acid	$2.16x10^{4}$	$3.00x10^{-3}$	$2.50x10^{2}$	$2.95x10^{-1}$	FALSE
858	107-83-5	Isohexanes	$9.38x10^{2}$	$1.30x10^{-4}$	$3.50x10^{3}$	4.13	FALSE
858	108-65-6	Methoxy acetate	$3.98x10^{4}$	$5.53x10^{-3}$	$2.75x10^{3}$	3.25	FALSE
870	872-50-4	1-Methyl-2-Pyrrolidinone	$1.54x10^{4}$	$2.14x10^{-3}$	$8.00x10^{2}$	$9.45x10^{-1}$	FALSE
870	100-51-6	Alcohol, Benzyl	$7.89x10^{5}$	$1.10x10^{-1}$	No OEL		
870	64-17-5	Alcohol, Ethyl	$3.08x10^{7}$	4.28	$1.88x10^{4}$	$2.22x10^{1}$	FALSE
878	110-71-4	1,2-Dimethoxyethane	$7.18x10^{2}$	$9.97x10^{-5}$	No OEL		
878	142-96-1	1-Butoxybutane, butyl ether	$6.53x10^{2}$	$9.07x10^{-5}$	No OEL		
878	90-72-2	2,4,6-Tri(dimethylaminomethyl) phenol	$2.69x10^{3}$	$3.74x10^{-4}$	No OEL		
878	112-34-5	2-Butyl oxyethanol dipropylene glycol	$3.94x10^{4}$	$5.47x10^{-3}$	$1.00x10^{3}$	1.18	FALSE
878	111-15-9	2-Ethoxyethyl acetate	$8.53x10^{3}$	$1.18x10^{-3}$	$2.70x10^{1}$	$3.19x10^{-2}$	FALSE
878	64-19-7	Acetic acid	$1.28x10^{4}$	$1.77x10^{-3}$	$2.50x10^{2}$	$2.95x10^{-1}$	FALSE
878	64742-89-8	Aliphatic petroleum distillates	$4.52x10^{3}$	$6.27x10^{-4}$	No OEL		
878	100-51-6	Benzyl alcohol	$1.25x10^{4}$	$1.74x10^{-3}$	No OEL		
878	111-76-2	Butyl cellosolve (R)	$5.97x10^{3}$	$8.29x10^{-4}$	$2.40x10^{2}$	$2.83x10^{-1}$	FALSE
878	76-22-2	Camphor	$7.44x10^{1}$	$1.03x10^{-5}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
878	76-12-0	Chlorofluorocarbon-112	$1.25x10^{2}$	$1.74x10^{-5}$	$1.69x10^{4}$	$2.00x10^{1}$	FALSE
878	110-82-7	Cyclohexane	$3.40x10^{2}$	$4.73x10^{-5}$	$7.00x10^{3}$	8.26	FALSE

Table D.1–15. Projected Volatile Organic Compound (VOC) Emissions Reduced Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
878	108-93-0	Cyclohexanol	8.00	1.11×10^{-6}	2.00×10^{3}	2.36	FALSE
878	108-91-8	Cyclohexylamine	1.83×10^{4}	2.54×10^{-3}	4.00×10^{2}	4.72×10^{-1}	FALSE
878	124-18-5	Decane	3.50×10^{2}	4.86×10^{-5}	No OEL		
878	115-10-6	Dimethyl ether	9.17×10^{2}	1.27×10^{-4}	1.91×10^{4}	2.26×10^{1}	FALSE
878	67-68-5	Dimethylsulfoxide	4.40×10^{3}	6.11×10^{-4}	No OEL		
878	109-87-5	Dimethyoxymethane (methylal)	3.40	4.72×10^{-7}	3.10×10^{4}	3.66×10^{1}	FALSE
878	2807-30-9	Ektasolve ep	2.27×10^{1}	3.15×10^{-6}	8.50×10^{-2}	1.00	FALSE
878	64-17-5	Ethanol	8.84×10^{4}	1.23×10^{-2}	1.88×10^{4}	2.22×10^{1}	FALSE
878	141-78-6	Ethyl acetate	4.88×10^{2}	6.77×10^{-5}	1.40×10^{4}	1.65×10^{1}	FALSE
878	78-10-4	Ethyl silicate	4.79×10^{2}	6.65×10^{-5}	8.50×10^{2}	1.00	FALSE
878	74-85-1	Ethylene	5.17×10^{4}	7.18×10^{-3}	No OEL		
878	64-18-6	Formic acid	5.68×10^{3}	7.89×10^{-4}	9.00×10^{1}	1.06×10^{-1}	FALSE
878	75-28-5	Isobutane	1.71×10^{3}	2.37×10^{-4}	1.90×10^{4}	2.24×10^{1}	FALSE
878	110-19-0	Isobutyl acetate	5.10×10^{1}	7.08×10^{-6}	7.00×10^{3}	8.26	FALSE
878	67-63-0	Isopropyl alcohol	2.21×10^{5}	3.07×10^{-2}	4.90×10^{3}	5.79	FALSE
878	64742-88-7	Medium aliphatic solvent naphtha	2.61×10^{2}	3.62×10^{-5}	No OEL		
878	108-65-6	Methoxy acetate	5.30×10^{2}	7.37×10^{-5}	2.75×10^{3}	3.25	FALSE
878	4253-34-3	Methyltriacetoxy silane	7.26×10^{1}	1.01×10^{-5}	No OEL		
878	1185-55-3	Methyltrimethoysilane	8.69×10^{1}	1.21×10^{-5}	No OEL		
878	628-63-7	n-Amyl acetate	4.38×10^{2}	6.08×10^{-5}	2.60×10^{3}	3.07	FALSE
878	106-97-8	n-Butane	1.91×10^{2}	2.66×10^{-5}	1.90×10^{4}	2.24×10^{1}	FALSE
878	123-86-4	n-Butyl acetate	1.36×10^{3}	1.89×10^{-4}	7.10×10^{3}	8.38	FALSE

Table D.1–15. Projected Volatile Organic Compound (VOC) Emissions Reduced Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
878	71-23-8	n-Butyl alcohol	$6.74x10^{3}$	$9.36x10^{-4}$	$3.00x10^{3}$	3.54	FALSE
878	2426-08-6	n-Butyl glycidyl ether (BGE)	$2.72x10^{2}$	$3.78x10^{-5}$	$1.33x10^{3}$	1.57	FALSE
878	142-82-5	n-Heptane	$6.03x10^{2}$	$8.37x10^{-5}$	$3.50x10^{3}$	4.13	FALSE
878	872-50-4	N-Methyl-2-pyrrolidone	$3.70x10^{4}$	$5.13x10^{-3}$	$8.00x10^{2}$	$9.45x10^{-1}$	FALSE
878	109-66-0	Pentane	$3.25x10^{2}$	$4.51x10^{-5}$	$3.50x10^{3}$	4.13	FALSE
878	8002-05-9	Petroleum	$4.53x10^{2}$	$6.30x10^{-5}$	No OEL		
878	64742-47-8	Petroleum distillate	$1.73x10^{3}$	$2.40x10^{-4}$	$3.50x10^{3}$	4.13	FALSE
878	9003-53-6	Phenlylethylene (styrene, monomer)	$1.05x10^{2}$	$1.46x10^{-5}$	$8.50x10^{2}$	1.00	FALSE
878	9036-19-5	Poly(oxy-1,2-ethandiyl)	5.03	$6.99x10^{-7}$	No OEL		
878	74-98-6	Propane	$2.13x10^{3}$	$2.95x10^{-4}$	$1.80x10^{4}$	$2.13x10^{1}$	FALSE
878	71-23-8	Propyl alcohol	$4.06x10^{3}$	$5.63x10^{-4}$	$4.92x10^{3}$	5.81	FALSE
878	57-55-6	Propylene gylcol	$3.29x10^{2}$	$4.57x10^{-5}$	No OEL		
878	110-86-1	Pyridine	$1.94x10^{2}$	$2.69x10^{-5}$	$1.50x10^{2}$	$1.77x10^{-1}$	FALSE
878	78-92-2	sec-Butyl alcohol	$1.34x10^{3}$	$1.86x10^{-4}$	$3.00x10^{3}$	3.54	FALSE
878	8052-41-3	Stoddard solvent	$2.27x10^{2}$	$3.15x10^{-5}$	$3.50x10^{3}$	4.13	FALSE
878	75-65-0	t-Butyl alcohol	3.40	$4.72x10^{-7}$	$3.00x10^{3}$	3.54	FALSE
878	26140-60-3	Terphenyls	$4.77x10^{2}$	$6.62x10^{-5}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
878	109-99-9	Tetrahydrofuran	$4.23x10^{2}$	$5.87x10^{-5}$	$1.50x10^{3}$	1.77	FALSE
878	546-68-9	Titanium isopropoxides	$7.09x10^{1}$	$9.84x10^{-6}$	No OEL		
878	26471-62-5	Toluene diisocyanate	$2.95x10^{3}$	$4.10x10^{-4}$	No OEL		
878	91-08-7	Toluene-2,6-diisocyanate	$2.04x10^{1}$	$2.83x10^{-6}$	$7.00x10^{-1}$	$8.26x10^{-4}$	FALSE
878	102-71-6	Triethanolamine	$2.68x10^{1}$	$3.72x10^{-6}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE

Table D.1–15. Projected Volatile Organic Compound (VOC) Emissions Reduced Operations Alternative Screening Level Analysis (continued)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
878	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	$2.75x10^{-1}$	$3.82x10^{-8}$	$3.50x10^{3}$	4.13	FALSE
893	67-68-5	Dimethylsulfoxide	$2.20x10^{3}$	$3.06x10^{-4}$	No OEL		
893	64-17-5	Ethanol	$3.92x10^{3}$	$5.44x10^{-4}$	$1.88x10^{4}$	$2.22x10^{1}$	FALSE
893	67-63-0	Isopropyl alcohol	$1.77x10^{5}$	$2.46x10^{-2}$	$4.90x10^{3}$	5.79	FALSE
893	108-65-6	Methoxy acetate	$8.20x10^{3}$	$1.14x10^{-3}$	$2.75x10^{3}$	3.25	FALSE
893	872-50-4	N-Methyl-2-pyrrolidone	$8.21x10^{3}$	$1.14x10^{-3}$	$8.00x10^{2}$	$9.45x10^{-1}$	FALSE
893	8032-32-4	Varnish Makers and Painters (VM&P) naphtha	$2.40x10^{3}$	$3.33x10^{-4}$	$3.50x10^{3}$	4.13	FALSE
897	764-41-0	1,4-Dichloro-2-butene	$4.51x10^{1}$	$6.26x10^{-6}$	$2.50x10^{-1}$	$2.95x10^{-4}$	FALSE
897	64-19-7	Acetic acid	$4.56x10^{4}$	$6.33x10^{-3}$	$2.50x10^{2}$	$2.95x10^{-1}$	FALSE
897	75-36-5	Acetyl chloride	$1.41x10^{3}$	$1.96x10^{-4}$	No OEL		
897	106-92-3	Allyl glycidyl ether	$1.54x10^{1}$	$2.13x10^{-6}$	$2.20x10^{2}$	$2.60x10^{-1}$	FALSE
897	100-51-6	Benzyl alcohol	$4.79x10^{2}$	$6.66x10^{-5}$	No OEL		
897	128-37-0	Butylated hydroxytoluene	$9.11x10^{1}$	$1.26x10^{-5}$	$1.00x10^{2}$	$1.18x10^{-1}$	FALSE
897	110-82-7	Cyclohexane	2.75	$3.82x10^{-7}$	$7.00x10^{3}$	8.26	FALSE
897	124-40-3	Dimethylamine	$3.66x10^{2}$	$5.09x10^{-5}$	$4.00x10^{1}$	$4.72x10^{-2}$	FALSE
897	67-68-5	Dimethylsulfoxide	$1.03x10^{3}$	$1.44x10^{-4}$	No OEL		
897	64-17-5	Ethanol	$7.69x10^{1}$	$1.07x10^{-5}$	$1.88x10^{4}$	$2.22x10^{1}$	FALSE
897	141-78-6	Ethyl acetate	$1.64x10^{4}$	$2.28x10^{-3}$	$1.40x10^{4}$	$1.65x10^{1}$	FALSE
897	60-29-7	Ethyl ether (diethyl ether)	$2.01x10^{4}$	$2.79x10^{-3}$	$1.20x10^{4}$	$1.42x10^{1}$	FALSE
897	78-10-4	Ethyl silicate	$5.77x10^{2}$	$8.02x10^{-5}$	$8.50x10^{2}$	1.00	FALSE
897	107-83-5	Isohexanes	$1.30x10^{4}$	$1.80x10^{-3}$	$3.50x10^{3}$	4.13	FALSE
897	67-63-0	Isopropyl alcohol	$7.15x10^{4}$	$9.93x10^{-3}$	$4.90x10^{3}$	5.79	FALSE

Table D.1–15. Projected Volatile Organic Compound (VOC) Emissions Reduced Operations Alternative Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULTS
897	8008-20-6	Kerosene	2.77×10^{3}	3.85×10^{-4}	1.00×10^{3}	1.18	FALSE
897	126-98-7	Methacrylonitrile	7.31×10^{1}	1.02×10^{-5}	2.70×10^{1}	3.19×10^{-2}	FALSE
897	55-55-0	Methal amino phenol sulphate	3.78×10^{2}	5.25×10^{-5}	No OEL		
897	75-79-6	Methyltrichlorosilane	5.89×10^{2}	8.18×10^{-5}	No OEL		
897	71-23-8	n-Butyl alcohol	1.45×10^{2}	2.01×10^{-5}	3.00×10^{3}	3.54	FALSE
897	142-82-5	n-Heptane	4.98×10^{3}	6.92×10^{-4}	3.50×10^{3}	4.13	FALSE
897	109-66-0	Pentane	1.76×10^{3}	2.44×10^{-4}	3.50×10^{3}	4.13	FALSE
897	79-21-0	Peracetic acid	5.20×10^{1}	7.22×10^{-6}	No OEL		
897	9003-53-6	Phenlylethylene (styrene, monomer)	7.36×10^{-1}	1.02×10^{-7}	8.50×10^{2}	1.00	FALSE
897	71-23-8	Propyl alcohol	2.74×10^{4}	3.81×10^{-3}	4.92×10^{3}	5.81	FALSE
897	109-99-9	Tetrahydrofuran	1.07×10^{4}	1.49×10^{-3}	1.50×10^{3}	1.77	FALSE
897	998-30-1	Triethoxysilane	3.89×10^{2}	5.40×10^{-5}	No OEL		
905	64-17-5	Ethanol	1.15×10^{3}	1.60×10^{-4}	1.88×10^{4}	2.22×10^{1}	FALSE
905	67-63-0	Isopropyl alcohol	2.47×10^{3}	3.44×10^{-4}	4.90×10^{3}	5.79	FALSE
905	109-99-9	Tetrahydrofuran	6.69×10^{2}	9.29×10^{-5}	1.50×10^{3}	1.77	FALSE
963	67-63-0	Isopropyl alcohol	7.85×10^{2}	1.09×10^{-4}	4.90×10^{3}	5.79	FALSE

Table D.1–16. Additional Chemical List Baseline Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
858	7664-41-7	Ammonia	$1.36x10^{4}$	$1.89x10^{-3}$	$1.40x10^{2}$	$1.65x10^{-1}$	FALSE
858	7784-42-1	Arsine (15%)	$1.55x10^{3}$	$2.16x10^{-4}$	1.60	$1.89x10^{-3}$	FALSE
858	7782-50-5	Chlorine	$9.90x10^{4}$	$1.38x10^{-2}$	$1.50x10^{1}$	$1.77x10^{-2}$	FALSE
858	7782-41-4	Fluorine (5%) in argon	$1.70x10^{3}$	$2.36x10^{-4}$	2.00	$2.36x10^{-3}$	FALSE
858	10035-10-6	Hydrogen bromide (hydrobromic acid)	$1.37x10^{4}$	$1.91x10^{-3}$	$6.70x10^{1}$	$7.91x10^{-2}$	FALSE
858	7783-54-2	Nitrogen trifluoride	$5.00x10^{3}$	$6.94x10^{-4}$	$2.90x10^{2}$	$3.42x10^{-1}$	FALSE
858	109-99-9	Tetrahydrofuran, anhydrous, 99.9%	$1.68x10^{3}$	$2.33x10^{-4}$	$1.50x10^{3}$	1.77	FALSE
858	156-60-5	Trans,1,2-dichloroethylene	$4.02x10^{4}$	$5.59x10^{-3}$	$7.90x10^{3}$	9.33	FALSE
878	1336-21-6	Ammonium hydroxide	$1.17x10^{6}$	$1.63x10^{-1}$	$1.4x10^{2}$	$1.65x10^{-1}$	FALSE
878	7697-37-2	Nitric acid	$6.33x10^{4}$	$8.79x10^{-3}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
893	7664-41-7	Ammonia	$1.36x10^{4}$	$1.89x10^{-3}$	$1.40x10^{2}$	$1.65x10^{-1}$	FALSE
893	7784-42-1	Arsine	$5.54x10^{4}$	$7.69x10^{-3}$	1.60	$1.89x10^{-3}$	TRUE
893	7783-07-5	Hydrogen selenide	$4.77x10^{4}$	$6.63x10^{-3}$	1.60	$1.89x10^{-3}$	TRUE
893	7803-51-2	Phosphine (100%)	$2.27x10^{3}$	$3.15x10^{-4}$	1.40	$1.65x10^{-3}$	FALSE
893	7803-62-5	Silane (silicon tetrafluoride)	$1.03x10^{3}$	$1.43x10^{-4}$	$6.60x10^{1}$	$7.79x10^{-3}$	FALSE
893	7446-09-5	Sulfur dioxide	$1.51x10^{2}$	$2.10x10^{-5}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE

Table D.1–17. Additional Chemical List No Action Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
858	7664-41-7	Ammonia	2.38×10^{4}	3.31×10^{-3}	1.40×10^{2}	1.65×10^{-1}	FALSE
858	7784-42-1	Arsine (15%)	2.71×10^{3}	3.77×10^{-4}	1.60	1.89×10^{-3}	FALSE
858	7782-50-5	Chlorine	1.73×10^{5}	2.41×10^{-2}	1.50×10^{1}	1.77×10^{-2}	TRUE
858	7782-41-4	Fluorine (5%) in argon	2.98×10^{3}	4.13×10^{-4}	2.00	2.36×10^{-3}	FALSE
858	10035-10-6	Hydrogen bromide (hydrobromic acid)	2.40×10^{4}	3.34×10^{-3}	6.70×10^{1}	7.91×10^{-2}	FALSE
858	7783-54-2	Nitrogen trifluoride	8.74×10^{3}	1.21×10^{-3}	2.90×10^{2}	3.42×10^{-1}	FALSE
858	109-99-9	Tetrahydrofuran, anhydrous, 99.9%	2.94×10^{3}	4.08×10^{-4}	1.50×10^{3}	1.77	FALSE
858	156-60-5	Trans,1,2-dichloroethylene	7.04×10^{4}	9.78×10^{-3}	7.90×10^{3}	9.33	FALSE
878	1336-21-6	Ammonium hydroxide	1.76×10^{6}	2.45×10^{-1}	1.4×10^{2}	1.65×10^{-1}	TRUE
878	7697-37-2	Nitric acid	9.49×10^{4}	1.32×10^{-2}	5.00×10^{1}	5.90×10^{-2}	FALSE
893	7664-41-7	Ammonia	2.72×10^{4}	3.78×10^{-3}	1.40×10^{2}	1.65×10^{-1}	FALSE
893	7784-42-1	Arsine	1.11×10^{5}	1.54×10^{-2}	1.60	1.89×10^{-3}	TRUE
893	7783-07-5	Hydrogen selenide	9.54×10^{4}	1.33×10^{-2}	1.60	1.89×10^{-3}	TRUE
893	7803-51-2	Phosphine (100%)	4.54×10^{3}	6.30×10^{-4}	1.40	1.65×10^{-3}	FALSE
893	7803-62-5	Silane (silicon tetrafluoride)	2.06×10^{3}	2.86×10^{-4}	6.60×10^{1}	7.79×10^{-3}	FALSE
893	7446-09-5	Sulfur dioxide	3.02×10^{2}	4.19×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE

Table D.1–18. Additional Chemical List, Expanded Operations Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
858	7664-41-7	Ammonia	$2.55x10^{4}$	$3.54x10^{-3}$	$1.40x10^{2}$	$1.65x10^{-1}$	FALSE
858	7784-42-1	Arsine (15%)	$2.91x10^{3}$	$4.04x10^{-4}$	1.60	$1.89x10^{-3}$	FALSE
858	7782-50-5	Chlorine	$1.86x10^{5}$	$2.58x10^{-2}$	$1.50x10^{1}$	$1.77x10^{-2}$	TRUE
858	7782-41-4	Fluorine (5%) in argon	$3.19x10^{3}$	$4.43x10^{-4}$	2.00	$2.36x10^{-3}$	FALSE
858	10035-10-6	Hydrogen bromide (hydrobromic acid)	$2.58x10^{4}$	$3.58x10^{-3}$	$6.70x10^{1}$	$7.91x10^{-2}$	FALSE
858	7783-54-2	Nitrogen trifluoride	$9.37x10^{3}$	$1.30x10^{-3}$	$2.90x10^{2}$	$3.42x10^{-1}$	FALSE
858	109-99-9	Tetrahydrofuran, anhydrous, 99.9%	$3.15x10^{3}$	$4.37x10^{-4}$	$1.50x10^{3}$	1.77	FALSE
858	156-60-5	Trans,1,2-dichloroethylene	$7.54x10^{4}$	$1.05x10^{-2}$	$7.90x10^{3}$	9.33	FALSE
878	1336-21-6	Ammonium hydroxide	$2.35x10^{6}$	$3.26x10^{-1}$	$1.4x10^{2}$	$1.65x10^{-1}$	TRUE
878	7697-37-2	Nitric acid	$1.27x10^{5}$	$1.76x10^{-2}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
893	7664-41-7	Ammonia	$2.72x10^{4}$	$3.78x10^{-3}$	$1.40x10^{2}$	$1.65x10^{-1}$	FALSE
893	7784-42-1	Arsine	$1.11x10^{5}$	$1.54x10^{-2}$	1.60	$1.89x10^{-3}$	TRUE
893	7783-07-5	Hydrogen selenide	$9.54x10^{4}$	$1.33x10^{-2}$	1.60	$1.89x10^{-3}$	TRUE
893	7803-51-2	Phosphine (100%)	$4.54x10^{3}$	$6.30x10^{-4}$	1.40	$1.65x10^{-3}$	FALSE
893	7803-62-5	Silane (silicon tetrafluoride)	$2.06x10^{3}$	$2.86x10^{-4}$	$6.60x10^{1}$	$7.79x10^{-3}$	FALSE
893	7446-09-5	Sulfur dioxide	$3.02x10^{2}$	$4.19x10^{-5}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE

Table D.1–19. Additional Chemical List, Reduced Operations Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS g/yr	EMISSION RATE g/sec	OEL/100 µg/m^3	TEV g/sec	RESULT
858	7664-41-7	Ammonia	9.12×10^{3}	1.27×10^{-3}	1.40×10^{2}	1.65×10^{-1}	FALSE
858	7784-42-1	Arsine (15%)	1.04×10^{3}	1.44×10^{-4}	1.60	1.89×10^{-3}	FALSE
858	7782-50-5	Chlorine	6.63×10^{4}	9.21×10^{-3}	1.50×10^{1}	1.77×10^{-2}	FALSE
858	7782-41-4	Fluorine (5%) in argon	1.14×10^{3}	1.58×10^{-4}	2.00	2.36×10^{-3}	FALSE
858	10035-10-6	Hydrogen bromide (hydrobromic acid)	9.21×10^{3}	1.28×10^{-3}	6.70×10^{1}	7.91×10^{-2}	FALSE
858	7783-54-2	Nitrogen trifluoride	3.35×10^{3}	4.65×10^{-4}	2.90×10^{2}	3.42×10^{-1}	FALSE
858	109-99-9	Tetrahydrofuran, anhydrous, 99.9%	1.12×10^{3}	1.56×10^{-4}	1.50×10^{3}	1.77	FALSE
858	156-60-5	Trans,1,2-dichloroethylene	2.70×10^{4}	3.74×10^{-3}	7.90×10^{3}	9.33	FALSE
878	1336-21-6	Ammonium hydroxide	1.17×10^{6}	1.63×10^{-1}	1.4×10^{2}	1.65×10^{-1}	FALSE
878	7697-37-2	Nitric acid	6.33×10^{4}	8.79×10^{-3}	5.00×10^{1}	5.90×10^{-2}	FALSE
893	7664-41-7	Ammonia	1.36×10^{4}	1.89×10^{-3}	1.40×10^{2}	1.65×10^{-1}	FALSE
893	7784-42-1	Arsine	5.54×10^{4}	7.69×10^{-3}	1.60	1.89×10^{-3}	TRUE
893	7783-07-5	Hydrogen selenide	4.77×10^{4}	6.63×10^{-3}	1.60	1.89×10^{-3}	TRUE
893	7803-51-2	Phosphine (100%)	2.27×10^{3}	3.15×10^{-4}	1.40	1.65×10^{-3}	FALSE
893	7803-62-5	Silane (silicon tetrafluoride)	1.03×10^{3}	1.43×10^{-4}	6.60×10^{1}	7.79×10^{-3}	FALSE
893	7446-09-5	Sulfur dioxide	1.51×10^{2}	2.10×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE

Table D.1–20. No Action Alternative Noncarcinogenic Chemical Emissions Exceeding the Threshold Emission Value

BUILDING NUMBER	CAS NUMBER	CHEMICALS EXCEEDING SCREENING LEVELS	EMISSIONS		ER (g/sec)	OEL/100 µg/m^3	TEV (g/sec)	RESULT
			g/yr	EF				
858	7782-50-5	Chlorine	$1.73x10^{5}$	0.00	0.00	$1.50x10^{1}$	$1.77x10^{-2}$	FALSE
858	7722-84-1	Hydrogen peroxide (concentration > 52%)	$3.10x10^{6}$	$3.00x10^{-4}$	$1.29x10^{-4}$	$1.40x10^{1}$	$1.65x10^{-2}$	FALSE
858	7697-37-2	Nitric acid	$3.99x10^{6}$	$3.00x10^{-4}$	$1.66x10^{-4}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
858	1310-73-2	Sodium hydroxide	$6.12x10^{7}$	0.00	0.00	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
870	101-77-9	4,4-Methylene dianiline (37%)	$1.68x10^{5}$	$2.40x10^{-3}$	$5.59x10^{-5}$	8.10	$9.56x10^{-3}$	FALSE
870	1333-82-0	Chromium Trioxide	$8.98x10^{3}$	$2.00x10^{-1}$	$2.49x10^{-4}$	$1.00x10^{-2}$	$1.18x10^{-5}$	TRUE
870	7440-48-4	Cobalt (17.4%)	$1.04x10^{4}$	$1.00x10^{-2}$	$1.45x10^{-5}$	$2.00x10^{-1}$	$2.36x10^{-4}$	FALSE
870	111-42-2	Diethanolamine (85%)	$3.05x10^{5}$	$2.40x10^{-3}$	$1.02x10^{-4}$	$2.00x10^{1}$	$2.36x10^{-2}$	FALSE
870	7429-90-5	Aluminum	$6.65x10^{5}$	$1.00x10^{-2}$	$9.23x10^{-4}$	$5.00x10^{1}$	$5.90x10^{-2}$	FALSE
870	7440-50-8	Copper	$6.65x10^{5}$	$1.00x10^{-2}$	$9.23x10^{-4}$	1.00	$1.18x10^{-3}$	FALSE
870	7718-54-9	Nickel Chloride	$7.98x10^{5}$	$1.79x10^{-6}$	$1.98x10^{-7}$	$1.50x10^{-1}$	$1.77x10^{-4}$	FALSE
870	7786-81-4	Nickel Sulfate	$7.98x10^{5}$	$1.79x10^{-6}$	$1.98x10^{-7}$	$1.50x10^{-1}$	$1.77x10^{-4}$	FALSE
870	7664-38-2	Phosphoric Acid	$1.10x10^{5}$	$1.00x10^{-2}$	$1.53x10^{-3}$	$4.00x10^{1}$	$1.18x10^{-2}$	FALSE
870	7631-86-9	Silica	$9.04x10^{5}$	$2.50x10^{-1}$	$3.14x10^{-2}$	$6.00x10^{1}$	$4.72x10^{-2}$	FALSE
870	7664-93-9	Sulfuric Acid	$1.10x10^{5}$	$1.00x10^{-2}$	$1.53x10^{-4}$	$1.00x10^{1}$	$1.18x10^{-2}$	FALSE
878	1344-28-1	Aluminum oxide (fibrous forms)	$2.50x10^{6}$	0.00	0.00	$1.00x10^{2}$	$5.90x10^{-2}$	FALSE
878	1336-21-6	Ammonium Hydroxide	$1.76x10^{6}$	$2.00x10^{-1}$	$4.89x10^{-2}$	$1.40x10^{2}$	$1.65x10^{-1}$	FALSE
878	7440-48-4	Cobalt	$3.03x10^{4}$	0.01	$4.21x10^{-5}$	$2.00x10^{-1}$	$2.36x10^{-4}$	FALSE
878	7440-50-8	Copper dusts and mists, as copper	$1.14x10^{5}$	0.26	$4.12x10^{-3}$	$1.00x10^{1}$	$1.18x10^{-2}$	FALSE

Table D.1–20. No Action Alternative Noncarcinogenic Chemical Emissions Exceeding the Threshold Emission Value (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICALS EXCEEDING SCREENING LEVELS	EMISSIONS		ER (g/sec)	OEL/100 µg/m^3	TEV (g/sec)	RESULT
			g/yr	EF				
878	7440-74-6	Indium & compounds as indium	1.32×10^{4}	0.01	1.83×10^{-5}	1.00	1.18×10^{-3}	FALSE
878	7439-92-1	Lead	7.97×10^{3}	0.00	0.00	5.00×10^{-1}	5.90×10^{-4}	FALSE
878	7439-97-6	Mercury	4.08×10^{4}	0.00	0.00	2.50×10^{-1}	2.95×10^{-4}	FALSE
878	14808-60-7	Quartz	6.03×10^{3}	0.00	0.00	5.00×10^{-1}	5.90×10^{-4}	FALSE
878	7631-86-9	Silica, fused (respirable)	9.68×10^{3}	0.00	0.00	5.00×10^{-1}	5.90×10^{-4}	FALSE
878	7440-22-4	Silver metal	2.10×10^{4}	0.00	0.00	1.00×10^{-1}	1.18×10^{-4}	FALSE
878	584-84-9	Toluene-2,4-diisocyanate	4.33×10^{3}	0.03	1.80×10^{-5}	3.60×10^{-1}	4.25×10^{-4}	FALSE
878	7440-62-2	Vanadium (fume or dust)	3.27×10^{4}	0.00	0.00	5.00×10^{-1}	5.90×10^{-4}	FALSE
893	7784-42-1	Arsine	1.11×10^{5}	0.00	0.00	1.60	1.89×10^{-3}	FALSE
893	7783-07-5	Hydrogen selenide	9.54×10^{4}	1.50×10^{-2}	1.99×10^{-4}	1.60	1.89×10^{-3}	FALSE
981	7664-93-9	Sulfuric acid	1.41×10^{5}	0.033	6.45×10^{-4}	1.00×10^{1}	1.18×10^{-2}	FALSE

Sources: SNL/NM 1998c, cc

Table D.1–21. Expanded Operations Alternative Noncarcinogenic Chemical Emissions Exceeding the TEV

BUILDING SOURCE	CAS NUMBER	CHEMICALS EXCEEDING SCREENING LEVELS	EMISSIONS		ER (g/sec)	OEL/100 µg/m^3	TEV (g/sec)	RESULTS
			g/yr	EF				
858	7782-50-5	Chlorine	1.86×10^{5}	0.00	0.00	1.50×10^{1}	1.77×10^{-2}	FALSE
858	7722-84-1	Hydrogen peroxide (concentration > 52%)	3.33×10^{6}	3.00×10^{-4}	1.39×10^{-4}	1.40×10^{1}	1.65×10^{-2}	FALSE
858	7697-37-2	Nitric acid	4.27×10^{6}	3.00×10^{-4}	1.78×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
858	1310-73-2	Sodium hydroxide	6.56×10^{7}	0.00	0.00	2.00×10^{1}	2.36×10^{-2}	FALSE
870	101-77-9	4,4 -Methylene dianiline (37%)	1.68×10^{5}	2.40×10^{-3}	5.59×10^{-5}	8.10	9.56×10^{-3}	FALSE
870	1333-82-0	Chromium Trioxide	8.98×10^{3}	2.00×10^{-1}	2.49×10^{-4}	1.00×10^{-2}	1.18×10^{-5}	TRUE
870	7440-48-4	Cobalt (17.4%)	1.04×10^{4}	1.00×10^{-2}	1.45×10^{-5}	2.00×10^{-1}	2.36×10^{-4}	FALSE
870	111-42-2	Diethanolamine (85%)	3.05×10^{5}	2.40×10^{-3}	1.02×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
870	7429-90-5	Aluminum	6.65×10^{5}	1.00×10^{-2}	9.23×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
870	7440-50-8	Copper	6.65×10^{5}	1.00×10^{-2}	9.23×10^{-4}	1.00	1.18×10^{-3}	FALSE
870	7718-54-9	Nickel Chloride	7.98×10^{5}	1.79×10^{-6}	1.98×10^{-7}	1.50×10^{-1}	1.77×10^{-4}	FALSE
870	7786-81-4	Nickel Sulfate	7.98×10^{5}	1.79×10^{-6}	1.98×10^{-7}	1.50×10^{-1}	1.77×10^{-4}	FALSE
870	7664-38-2	Phosphoric Acid	1.10×10^{5}	1.00×10^{-2}	1.53×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
870	7631-86-9	Silica	9.04×10^{5}	2.50×10^{-1}	3.14×10^{-2}	4.00×10^{1}	4.72×10^{-2}	FALSE
870	7664-93-9	Sulfuric Acid	1.10×10^{5}	1.00×10^{-2}	1.53×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	1344-28-1	Aluminum oxide (fibrous forms)	3.33×10^{6}	0.00	0.00	5.00×10^{1}	5.90×10^{-2}	FALSE
878	1336-21-6	Ammonium hydroxide	2.35×10^{6}	0.20	6.52×10^{-2}	1.40×10^{2}	1.65×10^{-1}	FALSE
878	7440-48-4	Cobalt	4.04×10^{4}	0.01	5.61×10^{-5}	2.00×10^{-1}	2.36×10^{-4}	FALSE
878	7440-50-8	Copper dusts and mists, as copper	1.52×10^{5}	0.26	5.49×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE

Table D.1–21. Expanded Operations Alternative Noncarcinogenic Chemical Emissions Exceeding the TEV (concluded)

BUILDING SOURCE	CAS NUMBER	CHEMICALS EXCEEDING SCREENING LEVELS	EMISSIONS		ER (g/sec)	OEL/100 µg/m^3	TEV (g/sec)	RESULTS
			g/yr	EF				
878	7440-74-6	Indium & compounds as indium	1.76×10^{4}	0.01	2.44×10^{-5}	1.00	1.18×10^{-3}	FALSE
878	7439-92-1	Lead	1.06×10^{4}	0.00	0.00	5.00×10^{-1}	5.90×10^{-4}	FALSE
878	7439-96-5	Manganese	2.12×10^{4}	0.00	0.00	2.00	2.36×10^{-3}	FALSE
878	7439-97-6	Mercury	5.44×10^{4}	0.00	0.00	2.50×10^{-1}	2.95×10^{-4}	FALSE
878	14808-60-7	Quartz	8.05×10^{3}	0.00	0.00	5.00×10^{-1}	5.90×10^{-4}	FALSE
878	7631-86-9	Silica, fused (respirable)	1.29×10^{4}	0.00	0.00	5.00×10^{-1}	5.90×10^{-4}	FALSE
878	7440-22-4	Silver metal	2.80×10^{4}	0.00	0.00	1.00×10^{-1}	1.18×10^{-4}	FALSE
878	584-84-9	Toluene-2,4-diisocyanate	5.77×10^{3}	0.03	2.40×10^{-5}	3.60×10^{-1}	4.25×10^{-4}	FALSE
878	7440-62-2	Vanadium (fume or dust)	4.36×10^{4}	0.00	0.00	5.00×10^{-1}	5.90×10^{-4}	FALSE
893	7784-42-1	Arsine	1.11×10^{5}	0.00	0.00	1.60	1.89×10^{-3}	FALSE
893	7783-07-5	Hydrogen selenide	9.54×10^{4}	1.50×10^{-2}	1.99×10^{-4}	1.60	1.89×10^{-3}	FALSE
893	7664-93-9	Sulfuric acid	1.41×10^{5}	0.033	6.46×10^{-4}	1.00×10^{1}	1.18×10^{-2}	FALSE
981	7664-93-9	Sulfuric acid	3.61×10^{5}	0.00	0.00	1.00×10^{1}	1.18×10^{-2}	FALSE

Sources: SNL/NM 1998c, cc

Table D.1–22. Reduced Operations Alternative Noncarcinogenic Chemical Emissions Exceeding the TEV

BUILDING NUMBER	CAS NUMBER	CHEMICALS EXCEEDING SCREENING LEVELS	EMISSIONS		ER (g/sec)	OEL/100 µg/m^3	TEV (g/sec)	RESULT
			g/yr	EF				
858	7722-84-1	Hydrogen peroxide (concentration > 52%)	1.19×10^{6}	3.00×10^{-4}	4.95×10^{-5}	1.40×10^{1}	1.65×10^{-2}	FALSE
858	7697-37-2	Nitric acid	1.53×10^{6}	3.00×10^{-4}	6.36×10^{-5}	5.00×10^{1}	5.90×10^{-2}	FALSE
858	1310-73-2	Sodium hydroxide	2.34×10^{7}	0.00	0.00	2.00×10^{1}	2.36×10^{-2}	FALSE
870	101-77-9	4,4-Methylene dianiline (37%)	1.68×10^{5}	2.4×10^{-3}	5.59×10^{-5}	8.10	9.56×10^{-3}	FALSE
870	1333-82-0	Chromium Trioxide	8.98×10^{3}	2.00×10^{-1}	2.49×10^{-4}	1.00×10^{-2}	1.18×10^{-5}	TRUE
870	7440-48-4	Cobalt (17.4%)	1.04×10^{4}	1.00×10^{-2}	1.45×10^{-5}	2.00×10^{-1}	2.36×10^{-4}	FALSE
870	111-42-2	Diethanolamine (85%)	3.05×10^{5}	2.4×10^{-3}	1.02×10^{-4}	2.00×10^{1}	2.36×10^{-2}	FALSE
870	7429-90-5	Aluminum	6.65×10^{5}	1.00×10^{-2}	9.23×10^{-4}	5.00×10^{1}	5.90×10^{-2}	FALSE
870	7440-50-8	Copper	6.65×10^{5}	1.00×10^{-2}	9.23×10^{-4}	1.00	1.18×10^{-3}	FALSE
870	7718-54-9	Nickel Chloride	7.98×10^{5}	1.79×10^{-6}	1.98×10^{-7}	1.50×10^{-1}	1.77×10^{-4}	FALSE
870	7786-81-4	Nickel Sulfate	7.98×10^{5}	1.79×10^{-6}	1.98×10^{-7}	1.50×10^{-1}	1.77×10^{-4}	FALSE
870	7664-38-2	Phosphoric Acid	1.10×10^{5}	1.00×10^{-2}	1.53×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
870	7631-86-9	Silica	9.04×10^{5}	2.50×10^{-1}	3.14×10^{-2}	4.00×10^{1}	4.72×10^{-2}	FALSE
870	7664-93-9	Sulfuric Acid	1.10×10^{5}	1.00×10^{-2}	1.53×10^{-3}	1.00×10^{1}	1.18×10^{-2}	FALSE
878	1344-28-1	Aluminum oxide (fibrous forms)	1.67×10^{6}	0.00	0.00	5.00×10^{1}	5.90×10^{-2}	FALSE
878	7440-48-4	Cobalt	2.02×10^{4}	0.01	2.80×10^{-5}	2.00×10^{-1}	2.36×10^{-4}	FALSE
878	7440-74-6	Indium & compounds as In	8.80×10^{3}	1.00×10^{-2}	1.22×10^{-5}	1.00	1.18×10^{-3}	FALSE
878	7439-92-1	Lead	5.32×10^{3}	0.00	0.00	5.00×10^{-1}	5.90×10^{-4}	FALSE
878	7439-97-6	Mercury	2.72×10^{4}	0.00	0.00	2.50×10^{-1}	2.95×10^{-4}	FALSE
878	7631-86-9	Silica, fused (respirable)	6.46×10^{3}	0.00	0.00	5.00×10^{-1}	5.90×10^{-4}	FALSE
878	7440-22-4	Silver metal	1.40×10^{4}	0.00	0.00	1.00×10^{-1}	1.18×10^{-4}	FALSE

Table D.1–22. Reduced Operations Alternative Noncarcinogenic Chemical Emissions Exceeding the TEV (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICALS EXCEEDING SCREENING LEVELS	EMISSIONS		ER (g/sec)	OEL/100 µg/m^3	TEV (g/sec)	RESULT
			g/yr	EF				
878	7440-62-2	Vanadium (fume or dust)	2.18×10^{4}	0.00	0.00	5.00×10^{-1}	5.90×10^{-4}	FALSE
893	7784-42-1	Arsine	5.54×10^{4}	0.00	0.00	1.60	1.89×10^{-3}	FALSE
893	7783-07-5	Hydrogen selenide	4.77×10^{4}	1.50×10^{-2}	9.94×10^{-5}	1.60	1.89×10^{-3}	FALSE

Sources: SNL/NM 1998c, cc

D.1.3.2 Carcinogenic Chemical Screening

The 15 chemicals identified as carcinogenic chemicals are screened according to the following criteria:

For each chemical, a concentration is calculated representing a cancer risk of $1.0x10^{-8}$ for an exposed individual. This cancer risk represents an incremental cancer risk of one-in-one-million ($1.0x10^{-6}$) (that is, one person in a million would develop cancer if exposed to this concentration over a lifetime), a level of concern established in the *Clean Air Act* (42 United States Code [U.S.C.] §7401). For the purposes of screening, the one-in-one-million cancer risk, is divided by 100 as a conservative safety factor, thereby establishing $1.0x10^{-8}$ as the cancer risk screening level.

The calculated concentration representing a cancer risk of $1.0x10^{-8}$ for an exposed individual at the maximum offsite and special receptor location is divided by the annual average concentration obtained from modeling a 1 gram per second emission rate from the prototypical stack. The annual average concentration is used since the $1.0x10^{-8}$ risk level represents a long-term exposure risk to an individual. The result is the TEV, an emission rate which results in a concentration with a cancer risk of $1.0x10^{-8}$. The TEV is compared to the hypothetical emission rate that is calculated by dividing the purchased quantity by 2,000 hours per year (50 work weeks times 40 hours). Tables D.1–23 through D.1–26 present the results of the carcinogenic chemical screening process comparing the hypothetical emission rate to the TEV representing an emission rate with a $1.0x10^{-8}$ risk. The tables present 1996 purchases, No Action Alternative, Expanded Operations Alternative, and Reduced Operations Alternative results, respectively. The word TRUE in the results column indicates that the hypothetical emission rate exceeds the TEV.

Table D.1–23. 1996 Annual Purchases of Carcinogenic Chemicals Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS		10^{-8} RISK LEVEL µg/m^3	TEV g/sec	RESULT
			g/yr	g/sec			
6580	67-66-3	Chloroform (Trichloromethane)	$5.91x10^{3}$	$8.21x10^{-4}$	$4.35x10^{-4}$	$1.24x10^{-5}$	TRUE
870	71-43-2	Benzene	$2.36x10^{4}$	$3.28x10^{-3}$	$1.20x10^{-3}$	$3.41x10^{-5}$	TRUE
870	75-09-2	Dichloromethane (Methylene chloride)	$6.67x10^{4}$	$9.26x10^{-3}$	$2.13x10^{-2}$	$6.05x10^{-4}$	TRUE
870	7440-02-0	Nickel (28%)	$5.44x10^{3}$	$7.56x10^{-4}$	$2.06x10^{-5}$	$5.85x10^{-7}$	TRUE
878	123-91-1	1,4-Dioxane[a]	$2.38x10^{3}$	$3.30x10^{-4}$	NA	NA	NA
878	107-13-1	Acrylonitrile	$1.00x10^{-1}$	$1.39x10^{-8}$	$1.47x10^{-4}$	$4.18x10^{-6}$	FALSE
878	71-43-2	Benzene	$8.71x10^{1}$	$1.21x10^{-5}$	$1.20x10^{-3}$	$3.41x10^{-5}$	FALSE
878	7440-43-9	Cadmium	$4.79x10^{2}$	$6.65x10^{-5}$	$5.56x10^{-6}$	$1.58x10^{-7}$	TRUE
878	75-09-2	Dichloromethane (Methylene chloride)	$9.82x10^{4}$	$1.36x10^{-2}$	$2.13x10^{-2}$	$6.05x10^{-4}$	TRUE
878	106-89-8	Epichlorohydrin	$2.23x10^{2}$	$3.10x10^{-5}$	$8.33x10^{-3}$	$2.37x10^{-4}$	FALSE
878	50-00-0	Formaldehyde	$1.87x10^{4}$	$2.60x10^{-3}$	$7.41x10^{-4}$	$2.11x10^{-5}$	TRUE
878	7440-02-0	Nickel	$1.62x10^{4}$	$2.26x10^{-3}$	$2.06x10^{-5}$	$5.85x10^{-7}$	TRUE
878	79-01-6	Trichloroethylene	$7.49x10^{5}$	$1.04x10^{-1}$	$5.83x10^{-3}$	$1.66x10^{-4}$	TRUE
893	107-06-2	1,2-Dichloroethane (Ethylene dichloride)	$6.27x10^{2}$	$8.72x10^{-5}$	$3.77x10^{-4}$	$1.07x10^{-5}$	TRUE
897	764-41-0	1,4-Dichloro-2-butene	$4.90x10^{1}$	$6.81x10^{-6}$	$3.76x10^{-6}$	$1.07x10^{-7}$	TRUE
897	123-91-1	1,4-Dioxane[a]	$5.25x10^{1}$	$7.29x10^{-6}$	NA	NA	NA
897	107-13-1	Acrylonitrile	$7.98x10^{1}$	$1.11x10^{-5}$	$1.47x10^{-4}$	$4.18x10^{-6}$	TRUE
897	71-43-2	Benzene	$1.08x10^{2}$	$1.50x10^{-5}$	$1.20x10^{-3}$	$3.41x10^{-5}$	FALSE
897	75-25-2	Bromoform (Tribromomethane)	$4.95x10^{1}$	$6.87x10^{-6}$	$9.09x10^{-3}$	$2.58x10^{-4}$	FALSE
897	67-66-3	Chloroform (Trichloromethane)	$1.48x10^{4}$	$2.05x10^{-3}$	$4.35x10^{-4}$	$1.24x10^{-5}$	TRUE
897	75-09-2	Dichloromethane (Methylene chloride)	$4.25x10^{4}$	$5.90x10^{-3}$	$2.13x10^{-2}$	$6.05x10^{-4}$	TRUE

Table D.1–23. 1996 Annual Purchases of Carcinogenic Chemicals Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS		10^{-8} RISK LEVEL $\mu g/m^3$	TEV g/sec	RESULT
			g/yr	g/sec			
897	75-56-9	Propylene oxide (1,2-Epoxypropane)	1.50	2.08×10^{-7}	2.70×10^{-3}	7.67×10^{-5}	FALSE
897	79-01-6	Trichloroethylene	2.94×10^{4}	4.08×10^{-3}	5.83×10^{-3}	1.66×10^{-4}	TRUE
905	75-09-2	Dichloromethane (Methylene chloride)	1.99×10^{4}	2.76×10^{-3}	2.13×10^{-2}	6.05×10^{-4}	TRUE

[a] NA: 10^{-8} risk level screening value not available; carcinogenic chemical screening performed using unit risk factors for inhalation risk. This chemical does not have inhalation toxicity information available. It is listed as an ingestion carcinogen.

Table D.1–24. Projected Carcinogenic Chemical Emissions No Action Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS			10^{-8} RISK LEVEL $\mu g/m^3$	TEV g/sec	RESULT
			g/yr	EF	g/sec			
6580	67-66-3	Chloroform (Trichloromethane)	$1.18x10^{4}$	0.10	$1.64x10^{-4}$	$4.35x10^{-4}$	$1.24x10^{-5}$	TRUE
870	71-43-2	Benzene	$7.98x10^{4}$	0	0	$1.20x10^{-3}$	$3.41x10^{-5}$	FALSE
870	75-09-2	Dichloromethane (Methylene chloride)	$2.01x10^{5}$	0.37	$1.03x10^{-2}$	$2.13x10^{-2}$	$6.05x10^{-4}$	TRUE
870	7440-02-0	Nickel (28%)	$1.68x10^{4}$	0	0	$2.06x10^{-5}$	$5.85x10^{-7}$	FALSE
878	123-91-1	1,4-Dioxane[a]	$3.56x10^{3}$	1.00	$4.95x10^{-4}$	NA	NA	NA
878	107-13-1	Acrylonitrile	$1.50x10^{-1}$	1.00	$2.08x10^{-8}$	$1.47x10^{-4}$	$4.18x10^{-6}$	FALSE
878	71-43-2	Benzene	$1.31x10^{2}$	0.11	$2.00x10^{-6}$	$1.20x10^{-3}$	$3.41x10^{-5}$	FALSE
878	7440-43-9	Cadmium	$7.18x10^{2}$	0	0	$5.56x10^{-6}$	$1.58x10^{-7}$	FALSE
878	75-09-2	Dichloromethane (Methylene chloride)	$1.47x10^{5}$	0.03	$6.14x10^{-4}$	$2.13x10^{-2}$	$6.05x10^{-4}$	TRUE
878	106-89-8	Epichlorohydrin	$3.35x10^{2}$	1.00	$4.66x10^{-5}$	$8.33x10^{-3}$	$2.37x10^{-4}$	FALSE
878	50-00-0	Formaldehyde	$2.81x10^{4}$	0.01	$3.90x10^{-5}$	$7.41x10^{-4}$	$2.11x10^{-5}$	TRUE
878	7440-02-0	Nickel	$2.44x10^{4}$	0	0	$2.06x10^{-5}$	$5.85x10^{-7}$	FALSE
878	79-01-6	Trichloroethylene	$1.12x10^{6}$	0.02	$3.12x10^{-3}$	$5.83x10^{-3}$	$1.66x10^{-4}$	TRUE
893	107-06-2	1,2-Dichloroethane (Ethylene dichloride)	$6.27x10^{2}$	1.00	$8.72x10^{-5}$	$3.77x10^{-4}$	$1.07x10^{-5}$	TRUE
897	764-41-0	1,4-Dichloro-2-butene	$4.90x10^{1}$	1.00	$6.81x10^{-6}$	$3.76x10^{-6}$	$1.07x10^{-7}$	TRUE
897	123-91-1	1,4-Dioxane[a]	$5.25x10^{1}$	1.00	$7.29x10^{-6}$	NA	NA	NA
897	107-13-1	Acrylonitrile	$7.98x10^{1}$	1.00	$1.11x10^{-5}$	$1.47x10^{-4}$	$4.18x10^{-6}$	TRUE
897	71-43-2	Benzene	$1.08x10^{2}$	0.11	$1.65x10^{-6}$	$1.20x10^{-3}$	$3.41x10^{-5}$	FALSE
897	75-25-2	Bromoform (Tribromomethane)	$4.95x10^{1}$	1.00	$6.87x10^{-6}$	$9.09x10^{-3}$	$2.58x10^{-4}$	FALSE
897	67-66-3	Chloroform (Trichloromethane)	$1.48x10^{4}$	0.10	$2.05x10^{-4}$	$4.35x10^{-4}$	$1.24x10^{-5}$	TRUE
897	75-09-2	Dichloromethane (Methylene chloride)	$4.25x10^{4}$	0.05	$2.95x10^{-4}$	$2.13x10^{-2}$	$6.05x10^{-4}$	FALSE
897	75-56-9	Propylene oxide (1,2-Epoxypropane)	1.50	1.00	$2.08x10^{-7}$	$2.70x10^{-3}$	$7.67x10^{-5}$	FALSE

Table D.1–24. Projected Carcinogenic Chemical Emissions No Action Alternative Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS			10^{-8} RISK LEVEL $\mu g/m^3$	TEV g/sec	RESULT
			g/yr	EF	g/sec			
897	79-01-6	Trichloroethylene	$2.94x10^{4}$	0.07	$2.86x10^{-4}$	$5.83x10^{-3}$	$1.66x10^{-4}$	TRUE
905	75-09-2	Dichloromethane (Methylene chloride)	$3.98x10^{4}$	0.02	$1.11x10^{-4}$	$2.13x10^{-2}$	$6.05x10^{-4}$	FALSE

[a] NA: 10^{-8} risk level screening value not available; carcinogenic chemical screening performed using unit risk factors for inhalation risk. This chemical does not have inhalation toxicity information available. It is listed as an ingestion carcinogen.

Table D.1–25. Projected Carcinogenic Chemical Emissions Expanded Operations Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS		EMISSION RATE	10^{-8} RISK LEVEL	TEV g/sec	RESULT
			g/yr	EF	g/sec	µg/m^3		
6580	67-66-3	Chloroform (Trichloromethane)	$8.87x10^{3}$	$1.00x10^{-1}$	$1.23x10^{-4}$	$4.35x10^{-4}$	$1.24x10^{-5}$	TRUE
870	71-43-2	Benzene	$7.98x10^{4}$	0.00	0.00	$1.20x10^{-3}$	$3.41x10^{-5}$	FALSE
870	75-09-2	Dichloromethane (Methylene chloride)	$2.01x10^{5}$	$3.70x10^{-1}$	$1.03x10^{-2}$	$2.13x10^{-2}$	$6.05x10^{-4}$	TRUE
870	7440-02-0	Nickel (28%)	$1.68x10^{4}$	0.00	0.00	$2.06x10^{-5}$	$5.85x10^{-7}$	FALSE
878	123-91-1	1,4-Dioxane[a]	$4.75x10^{3}$	1.00	$6.60x10^{-4}$	NA	NA	NA
878	107-13-1	Acrylonitrile	$2.00x10^{-1}$	1.00	$2.78x10^{-8}$	$1.47x10^{-4}$	$4.18x10^{-6}$	FALSE
878	71-43-2	Benzene	$1.74x10^{2}$	$1.10x10^{-1}$	$2.66x10^{-6}$	$1.20x10^{-3}$	$3.41x10^{-5}$	FALSE
878	7440-43-9	Cadmium	$9.57x10^{2}$	0.00	0.00	$5.56x10^{-6}$	$1.58x10^{-7}$	FALSE
878	75-09-2	Dichloromethane (Methylene chloride)	$1.96x10^{5}$	$3.00x10^{-2}$	$8.19x10^{-4}$	$2.13x10^{-2}$	$6.05x10^{-4}$	TRUE
878	106-89-8	Epichlorohydrin	$4.47x10^{2}$	1.00	$6.21x10^{-5}$	$8.33x10^{-3}$	$2.37x10^{-4}$	FALSE
878	50-00-0	Formaldehyde	$3.74x10^{4}$	$1.00x10^{-2}$	$5.19x10^{-5}$	$7.41x10^{-4}$	$2.11x10^{-5}$	TRUE
878	7440-02-0	Nickel	$3.25x10^{4}$	0.00	0.00	$2.06x10^{-5}$	$5.85x10^{-7}$	FALSE
878	79-01-6	Trichloroethylene	$1.50x10^{6}$	$2.00x10^{-2}$	$4.16x10^{-3}$	$5.83x10^{-3}$	$1.66x10^{-4}$	TRUE
893	107-06-2	1,2-Dichloroethane (Ethylene dichloride)	$1.25x10^{3}$	1.00	$1.74x10^{-4}$	$3.77x10^{-4}$	$1.07x10^{-5}$	TRUE
897	764-41-0	1,4-Dichloro-2-butene	$4.90x10^{1}$	1.00	$6.81x10^{-6}$	$3.76x10^{-6}$	$1.07x10^{-7}$	TRUE
897	123-91-1	1,4-Dioxane[a]	$5.25x10^{1}$	1.00	$7.29x10^{-6}$	NA	NA	NA
897	107-13-1	Acrylonitrile	$7.98x10^{1}$	1.00	$1.11x10^{-5}$	$1.47x10^{-4}$	$4.18x10^{-6}$	TRUE
897	71-43-2	Benzene	$1.08x10^{2}$	$1.10x10^{-1}$	$1.65x10^{-6}$	$1.20x10^{-3}$	$3.41x10^{-5}$	FALSE
897	75-25-2	Bromoform (Tribromomethane)	$4.95x10^{1}$	1.00	$6.87x10^{-6}$	$9.09x10^{-3}$	$2.58x10^{-4}$	FALSE
897	67-66-3	Chloroform (Trichloromethane)	$1.48x10^{4}$	$1.00x10^{-1}$	$2.05x10^{-4}$	$4.35x10^{-4}$	$1.24x10^{-5}$	TRUE
897	75-09-2	Dichloromethane (Methylene chloride)	$4.25x10^{4}$	$5.00x10^{-2}$	$2.95x10^{-4}$	$2.13x10^{-2}$	$6.05x10^{-4}$	FALSE

Table D.1–25. Projected Carcinogenic Chemical Emissions Expanded Operations Alternative Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS		EMISSION RATE	10^{-8} RISK LEVEL	TEV g/sec	RESULT
			g/yr	EF	g/sec	µg/m^3		
897	75-56-9	Propylene oxide (1,2-Epoxypropane)	1.50	1.00	2.08×10^{-7}	2.70×10^{-3}	7.67×10^{-5}	FALSE
897	79-01-6	Trichloroethylene	2.94×10^{4}	7.00×10^{-2}	2.86×10^{-4}	5.83×10^{-3}	1.66×10^{-4}	TRUE
905	75-09-2	Dichloromethane (Methylene chloride)	3.98×10^{4}	2.00×10^{-2}	1.11×10^{-4}	2.13×10^{-2}	6.05×10^{-4}	FALSE

[a] NA: 10^{-8} risk level screening value not available; carcinogenic chemical screening performed using unit risk factors for inhalation risk. This chemical does not have inhalation toxicity information available. It is listed as an ingestion carcinogen.

Table D.1–26. Projected Carcinogenic Chemical Emissions Reduced Operations Alternative Screening Level Analysis

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS			10^{-8} RISK LEVEL µg/m^3	TEV g/sec	RESULT
			g/yr	EF	g/sec			
6580	67-66-3	Chloroform (Trichloromethane)	$1.48x10^{3}$	$1.00x10^{-1}$	$2.05x10^{-5}$	$4.35x10^{-4}$	$1.24x10^{-5}$	TRUE
870	71-43-2	Benzene	$7.98x10^{4}$	0.00	0.00	$1.20x10^{-3}$	$3.41x10^{-5}$	FALSE
870	75-09-2	Dichloromethane (Methylene chloride)	$2.01x10^{5}$	$3.70x10^{-1}$	$1.03x10^{-2}$	$2.13x10^{-2}$	$6.05x10^{-4}$	TRUE
870	7440-02-0	Nickel (28%)	$1.68x10^{4}$	0.00	0.00	$2.06x10^{-5}$	$5.85x10^{-7}$	FALSE
878	123-91-1	1,4-Dioxane[a]	$2.38x10^{3}$	1.00	$3.30x10^{-4}$	NA	NA	NA
878	107-13-1	Acrylonitrile	$1.00x10^{-1}$	1.00	$1.39x10^{-8}$	$1.47x10^{-4}$	$4.18x10^{-6}$	FALSE
878	71-43-2	Benzene	$8.71x10^{1}$	$1.10x10^{-1}$	$1.33x10^{-6}$	$1.20x10^{-3}$	$3.41x10^{-5}$	FALSE
878	7440-43-9	Cadmium	$4.79x10^{2}$	0.00	0.00	$5.56x10^{-6}$	$1.58x10^{-7}$	FALSE
878	75-09-2	Dichloromethane (Methylene chloride)	$9.82x10^{4}$	$3.00x10^{-2}$	$4.09x10^{-4}$	$2.13x10^{-2}$	$6.05x10^{-4}$	FALSE
878	106-89-8	Epichlorohydrin	$2.23x10^{2}$	1.00	$3.10x10^{-5}$	$8.33x10^{-3}$	$2.37x10^{-4}$	FALSE
878	50-00-0	Formaldehyde	$1.87x10^{4}$	$1.00x10^{-2}$	$2.60x10^{-5}$	$7.41x10^{-4}$	$2.11x10^{-5}$	TRUE
878	7440-02-0	Nickel	$1.62x10^{4}$	0.00	0.00	$2.06x10^{-5}$	$5.85x10^{-7}$	FALSE
878	79-01-6	Trichloroethylene	$7.49x10^{5}$	$2.00x10^{-2}$	$2.08x10^{-3}$	$5.83x10^{-3}$	$1.66x10^{-4}$	TRUE
893	107-06-2	1,2-Dichloroethane (Ethylene dichloride)	$6.27x10^{2}$	1.00	$8.72x10^{-5}$	$3.77x10^{-4}$	$1.07x10^{-5}$	TRUE
897	764-41-0	1,4-Dichloro-2-butene	$4.51x10^{1}$	1.00	$6.26x10^{-6}$	$3.76x10^{-6}$	$1.07x10^{-7}$	TRUE
897	123-91-1	1,4-Dioxane[a]	$4.83x10^{1}$	1.00	$6.71x10^{-6}$	NA	NA	NA
897	107-13-1	Acrylonitrile	$7.34x10^{1}$	1.00	$1.02x10^{-5}$	$1.47x10^{-4}$	$4.18x10^{-6}$	TRUE
897	71-43-2	Benzene	$9.93x10^{1}$	$1.10x10^{-1}$	$1.52x10^{-6}$	$1.20x10^{-3}$	$3.41x10^{-5}$	FALSE
897	75-25-2	Bromoform (Tribromomethane)	$4.55x10^{1}$	1.00	$6.32x10^{-6}$	$9.09x10^{-3}$	$2.58x10^{-4}$	FALSE
897	67-66-3	Chloroform (Trichloromethane)	$1.36x10^{4}$	$1.00x10^{-1}$	$1.89x10^{-4}$	$4.35x10^{-4}$	$1.24x10^{-5}$	TRUE
897	75-09-2	Dichloromethane (Methylene chloride)	$3.91x10^{4}$	$5.00x10^{-2}$	$2.71x10^{-4}$	$2.13x10^{-2}$	$6.05x10^{-4}$	FALSE
897	75-56-9	Propylene oxide (1,2-Epoxypropane)	1.38	1.00	$1.92x10^{-7}$	$2.70x10^{-3}$	$7.67x10^{-5}$	FALSE

Table D.1–26. Projected Carcinogenic Chemical Emissions Reduced Operations Alternative Screening Level Analysis (concluded)

BUILDING NUMBER	CAS NUMBER	CHEMICAL	EMISSIONS			10^{-8} RISK LEVEL $\mu g/m^3$	TEV g/sec	RESULT
			g/yr	EF	g/sec			
897	79-01-6	Trichloroethylene	$2.70x10^{4}$	$7.00x10^{-2}$	$2.63x10^{-4}$	$5.83x10^{-3}$	$1.66x10^{-4}$	TRUE
905	75-09-2	Dichloromethane (Methylene chloride)	$3.98x10^{3}$	$2.00x10^{-2}$	$1.11x10^{-5}$	$2.13x10^{-2}$	$6.05x10^{-4}$	FALSE

[a] NA: 10^{-8} risk level screening value not available; carcinogenic chemical screening performed using unit risk factors for inhalation risk. This chemical does not have inhalation toxicity information available. It is listed as an ingestion carcinogen.

For those chemicals with a hypothetical emission rate greater than the TEV, additional process engineering estimates of chemical emissions are requested from the respective facilities. Those carcinogenic chemicals whose process engineering estimated emission rates still exceed the TEV are modeled using the process engineering chemical emissions for the building from which emissions occur to determine maximum offsite chemical concentrations and concentrations at public access areas (such as the National Atomic Museum, hospitals, and schools). Tables D.1–27, D.1–28, and D.1–29 present the No Action Alternative, Expanded Operations Alternative, and Reduced Operations Alternative results of the final screening step for the carcinogenic chemicals comparing emission rates derived from process engineering estimates to the TEV. The process

Table D.1–27. No Action Alternative Carcinogenic Chemical Emissions Exceeding Screening Levels

CHEMICALS EXCEEDING SCREENING LEVELS	BUILDING SOURCE	EMISSION RATE (g/sec)	TEV (g/sec)
Chloroform (trichloromethane)	6580	1.64×10^{-5}	1.24×10^{-5}
Dichloromethane (Methylene chloride)	870	1.03×10^{-2}	6.05×10^{-4}
Dichloromethane (Methylene chloride)	878	6.14×10^{-4}	6.05×10^{-4}
Formaldehyde	878	3.90×10^{-5}	2.11×10^{-5}
Trichloroethylene	878	3.12×10^{-3}	1.66×10^{-4}
1,2-Dichloroethane (Ethylene dichloride)	893	8.72×10^{-5}	1.07×10^{-5}
1,4-Dichloro-2-butene	897	6.81×10^{-6}	1.07×10^{-7}
Acrylonitrile	897	1.11×10^{-5}	4.18×10^{-6}
Chloroform (trichloromethane)	897	2.05×10^{-5}	1.24×10^{-5}
Trichloroethylene	897	2.86×10^{-4}	1.66×10^{-4}

Source: SNL/NM 1998a
g/sec: grams per second
TEV: threshold emission value
Bldg. 6580 – Hot Cell Facility (HCF)
Bldg. 870 – Neutron Generator Facility (NGF)
Bldg. 878 – Advanced Manufacturing Processes Laboratory (AMPL)
Bldg. 893 – Compound Semiconductor Research Laboratory (CSRL)
Bldg. 897 – Integrated Materials Research Laboratory (IMRL)

Table D.1–28. Expanded Operations Alternative Carcinogenic Chemical Emissions Exceeding Screening Levels

CHEMICALS EXCEEDING SCREENING LEVELS	BUILDING SOURCE	EMISSION RATE (g/sec)	TEV (g/sec)
Chloroform (trichloromethane)	6580	1.23×10^{-5}	1.24×10^{-5}
Dichloromethane (Methylene chloride)	870	1.03×10^{-2}	6.05×10^{-4}
Dichloromethane (Methylene chloride)	878	8.19×10^{-4}	6.05×10^{-4}
Formaldehyde	878	5.19×10^{-5}	2.11×10^{-5}
Trichloroethylene	878	4.16×10^{-3}	1.66×10^{-4}
1,2-Dichloroethane (Ethylene dichloride)	893	1.74×10^{-4}	1.07×10^{-5}
1,4-Dichloro-2-butene	897	6.81×10^{-6}	1.07×10^{-7}
Acrylonitrile	897	1.11×10^{-5}	4.18×10^{-6}
Chloroform (trichloromethane)	897	2.05×10^{-5}	1.24×10^{-5}
Trichloroethylene	897	2.86×10^{-4}	1.66×10^{-4}

Source: SNL/NM 1998a
g/sec: grams per second
TEV: threshold emission value
Bldg. 6580 – Hot Cell Facility (HCF)
Bldg. 870 – Neutron Generator Facility (NGF)
Bldg. 878 – Advanced Manufacturing Processes Laboratory (AMPL)
Bldg. 893 – Compound Semiconductor Research Laboratory (CSRL)
Bldg. 897 – Integrated Materials Research Laboratory (IMRL)

Table D.1–29. Reduced Operations Alternative Carcinogenic Chemical Emissions Exceeding Screening Levels

CHEMICALS EXCEEDING SCREENING LEVELS	BUILDING SOURCE	EMISSION RATE (g/sec)	TEV (g/sec)
Chloroform (trichloromethane)	6580	2.05×10^{-5}	1.24×10^{-5}
Dichloromethane (Methylene chloride)	870	1.03×10^{-2}	6.05×10^{-4}
Formaldehyde	878	2.60×10^{-5}	2.11×10^{-5}
Trichloroethylene	878	2.08×10^{-3}	1.66×10^{-4}
1,2-Dichloroethane (Ethylene dichloride)	893	8.72×10^{-5}	1.07×10^{-5}
1,4-Dichloro-2-butene	897	6.26×10^{-6}	1.07×10^{-7}
Acrylonitrile	897	1.02×10^{-5}	4.18×10^{-6}
Chloroform (trichloromethane)	897	1.89×10^{-4}	1.24×10^{-5}
Trichloroethylene	897	2.63×10^{-4}	1.66×10^{-4}

Source: SNL/NM 1998a
g/sec: grams per second
TEV: threshold emission value
Bldg. 6580 – Hot Cell Facility (HCF)
Bldg. 870 – Neutron Generator Facility (NGF)
Bldg. 878 – Advanced Manufacturing Processes Laboratory (AMPL)
Bldg. 893 – Compound Semiconductor Research Laboratory (CSRL)
Bldg. 897 – Integrated Materials Research Laboratory (IMRL)

engineering estimates are emission factors based upon facility process knowledge applicable to each of the chemical emissions. Concentrations of the carcinogenic chemicals based upon the process engineering emission rates are evaluated in the Human Health and Worker Safety section. (Section 5.3.8)

D.1.4 Mobile Sources

Mobile source emissions were calculated for each alternative based on estimated vehicle commuter traffic and onsite vehicle usage. The EPA model *MOBILE 5a* was used to estimate mobile source emission factors based on vehicular profiles input into the model. These factors were then used to calculate the emissions of carbon monoxide from SNL/NM vehicular traffic. Table D.1–30 presents the emission factors, assumptions, and calculations used to estimate the carbon monoxide contribution from SNL/NM vehicular traffic for the proposed alternatives. Figure D.1–5 presents the process used for evaluating mobile source emissions from SNL/NM commuter traffic.

The contributions of carbon monoxide emissions from vehicles commuting to and from SNL/NM and from SNL/NM-operated on-base vehicles as a percent of the total county carbon monoxide emissions are: No Action Alternative, 4.6 percent; Expanded Operations Alternative, 5.1 percent; and Reduced Operations Alternative, 4.5 percent. There is no increase of carbon monoxide emissions from vehicular traffic for any alternative above the baseline emissions. Rather, the annual emissions would be reduced by 250 tons under the Expanded Operations Alternative due to improvements in vehicle fleet emissions.

Based upon the analysis of stationary and mobile source emissions for carbon monoxide, even under the Expanded Operations Alternative, carbon monoxide emissions from SNL/NM would be less than the 1996 emissions. Therefore, there is no need for a "conformity analysis."

D.1.5 Fire Testing Facility

Figure D.1–6 presents the process used for evaluating emissions from fire testing facilities. Table D.1–31 presents the 89 chemical pollutants, applicable OEL/100 guidelines, and the respective 8-hour average concentrations at the Kirtland Air Force Base (KAFB) boundary from burning 1,000 gallons of JP-8 fuel at the open burn pools located in Lurance Canyon. Historically, the number of burns in a day varies from none to multiple. However, the maximum amount burned in a single day has been and is projected to be, 1,000 gal. The 1-hour pollutant concentrations were estimated using the model *OBODM*. These 1-hour concentrations were converted to 8-hour average concentrations and compared to 1/100th of the

Table D.1–30. Estimated Carbon Monoxide Emissions from SNL/NM

COMMUTER		ONBASE		PARAMETER
1996 BASELINE				
13,582.0		600.0		SNL/NM vehicles per day
x 30.0		x 30.0		Miles per day per vehicle
407,460.0		18,000.0		Total miles per day
x 33.4		x 33.4		Emission factor (grams per mile)
13,609,164.0		601,200.0		Carbon monoxide emissions (grams per day)
x 1.1023×10^{-6}		x 1.1023×10^{-6}		Conversion factor: grams to tons
15.0		0.66		Carbon monoxide emissions (tons per day)
x 261.0		x 261.0		Working days per year
3,915.0		172.0		Carbon monoxide emissions (tons per year)
3,915.0	**+**	**172.0**	**= 4,087**	Total carbon monoxide (tons per year)
Assumptions: Emission factor for the year 1996 assumed.				
NO ACTION ALTERNATIVE				
13,582.0		600.0		SNL/NM vehicles per day
x 30.0		x 30.0		Miles per day per vehicle
407,460.0		18,000.0		Total miles per day
x 28.5		x 28.5		Emission factor (grams per mile)
11,612,610.0		513,000.0		Carbon monoxide emissions (grams per day)
x 1.1023×10^{-6}		x 1.1023×10^{-6}		Conversion factor: grams to tons
12.8		0.57		Carbon monoxide emissions (tons per day)
x 261.0		x 261.0		Working days per year
3,341.0		148.0		Carbon monoxide emissions (tons per year)
3,341.0	**+**	**148.0**	**= 3,489**	Total carbon monoxide (tons per year)
Assumptions: Emission factor for the year 2005 assumed.				
EXPANDED OPERATIONS ALTERNATIVE				
14,940.0		660.0		SNL/NM vehicles per day
x 30.0		x 30.0		Miles per day per vehicle
448,200.0		19,800.0		Total miles per day
x 28.5		x 28.5		Emission factor (grams per mile)
12,773,700.0		564,300.0		Carbon monoxide emissions (grams per day)
x 1.1023×10^{-6}		x 1.1023×10^{-6}		Conversion factor: grams to tons
14.08		0.622		Carbon monoxide emissions (tons per day)
x 261.0		x 261.0		Working days per year
3,674.88		162.35		Carbon monoxide emissions (tons per year)
3,674.88	**+**	**162.35**	**= 3,837**	Total carbon monoxide (tons per year)
Assumptions: Emission factor for the year 2005 assumed; a 10 percent increase in vehicles per day from 1995 assumed.				

Table D.1–30. Estimated Carbon Monoxide Emissions from SNL/NM (concluded)

COMMUTER		ONBASE		PARAMETER
REDUCED OPERATIONS ALTERNATIVE				
13,175.0		582.0		SNL/NM vehicles per day
x 30.0		x 30.0		Miles per day per vehicle
395,250.0		17,460.0		Total miles per day
x 28.5		x 28.5		Emission factor (grams per mile)
11,264,625.0		497,610.0		Carbon monoxide emissions (grams per day)
x 1.1023×10^{-6}		x 1.1023×10^{-6}		Conversion factor: grams to tons
12.42		0.5485		Carbon monoxide emissions (tons per day)
x 261.0		x 261.0		Working days per year
3,241.60		143.16		Carbon monoxide emissions (tons per year)
3,241.60	**+**	**143.16**	**= 3,385**	Total carbon monoxide (tons per year)
Assumptions: Emission factor for the year 2005 assumed; a 3 percent decrease in vehicles per day from 1995 assumed.				

Source: SNL 1996c

ACGIH 8-hour exposure standard (OEL/100). Emissions are based on single tests and would be the same under the No Action and Expanded Operations Alternatives. The pollutant concentrations are evaluated in Section 5.3.8, Human Health and Worker Safety.

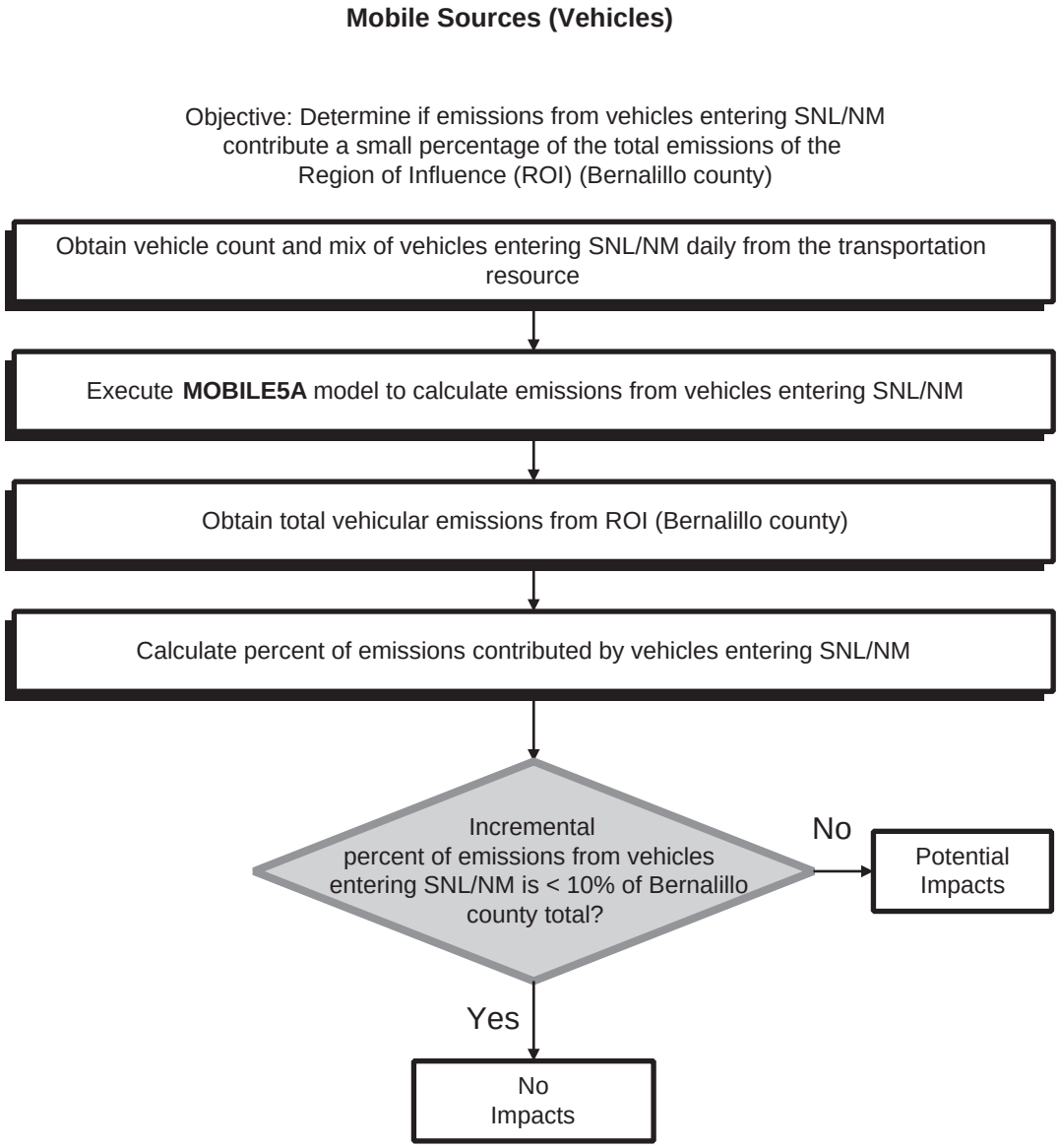


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Figure D.1–5. Flow Chart for Evaluation of Mobile Source Emissions

Various data are input into the MOBILE5A computer model to measure mobile source carbon monoxide emissions from SNL/NM commuters versus Bernalillo County mobile source carbon monoxide emissions.

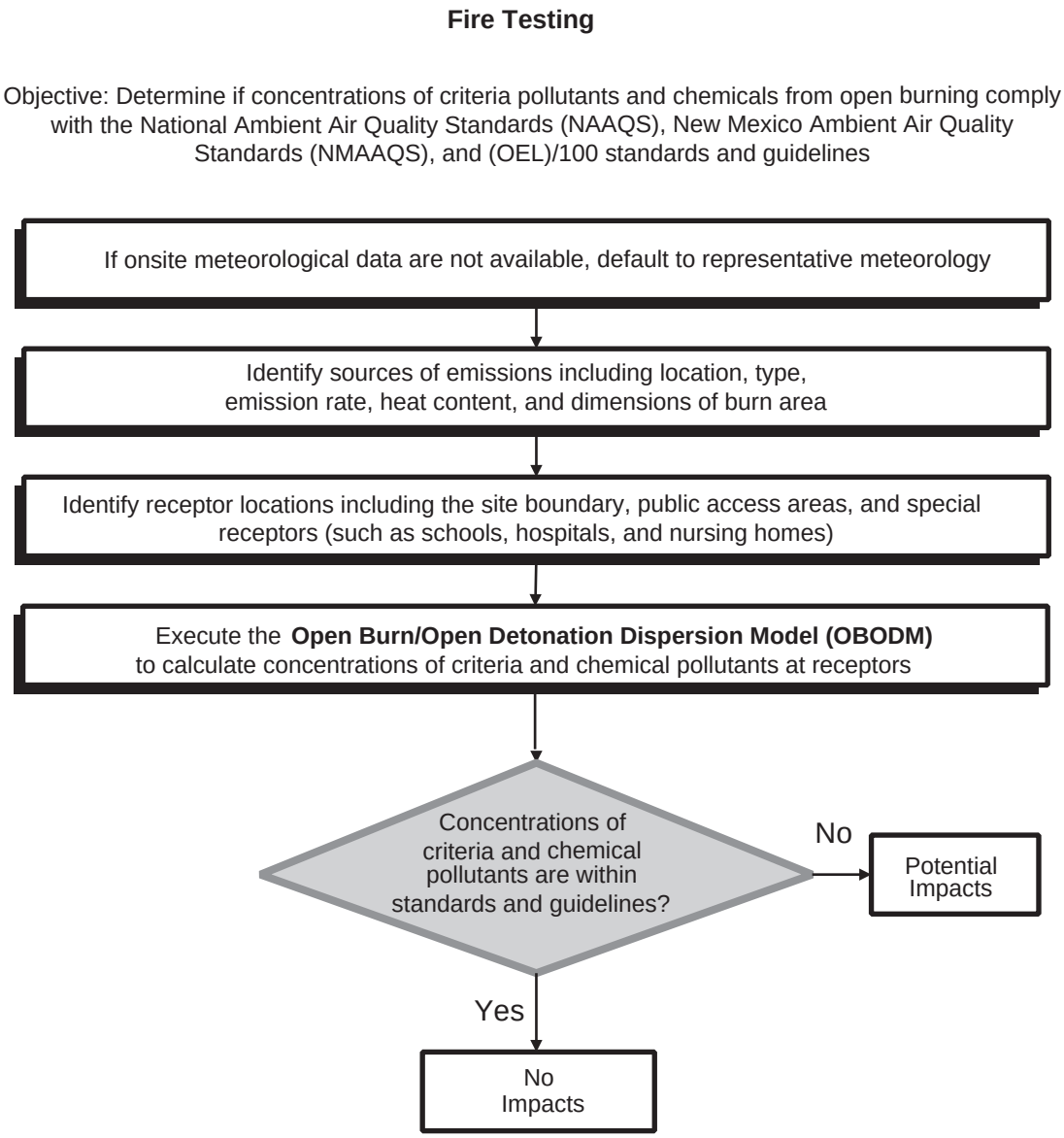

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Figure D.1–6. Flow Chart for Evaluation of Open Burning at the Lurance Canyon Burn Site

Open burning emissions are evaluated against national and state ambient air quality standards, using the OBODM computer model.

Table D.1–31. Toxic Pollutant Emissions from Open Burning of JP-8 Fuel at the Lurance Canyon Burn Site Under the No Action and Expanded Operations Alternatives

POLLUTANT	EMISSION FACTOR (g/g)	OEL/100 ($\mu g/m^3$)	ESTIMATED 8-HOUR CONCENTRATION ($\mu g/m^3$)
1,1,2-trichloroethane	5.90×10^{-5}	450	5.42×10^{-2}
1,2,3-trimethylbenzene	1.30×10^{-4}	1,230	1.19×10^{-1}
1,2,4-trichlorobenzene	2.00×10^{-3}	380	1.84
1,2,4-trimethylbenzene	1.40×10^{-4}	1,230	1.29×10^{-1}
1,2-dichloroethane	3.50×10^{-6}	40	3.21×10^{-3}
1,2-dichloropropane	2.50×10^{-7}	3,470	2.29×10^{-4}
1,3,5-trimethylbenzene	2.70×10^{-5}	1,230	2.48×10^{-2}
1,3-butadiene	2.40×10^{-4}	44	2.20×10^{-1}
1,4-dioxane	1.80×10^{-5}	720	1.65×10^{-2}
1-butanol	3.00×10^{-5}	3,000	2.75×10^{-2}
1-heptene	2.40×10^{-6}	NA	2.20×10^{-3}
1-hexene	2.50×10^{-5}	1,300	2.29×10^{-2}
1-octene	1.20×10^{-5}	NA	1.10×10^{-2}
1-pentene	2.10×10^{-5}	NA	1.93×10^{-2}
2,2,3-trimethylpentane	3.80×10^{-6}	NA	3.49×10^{-3}
2,2,5-trimethylhexane	5.40×10^{-6}	NA	4.96×10^{-3}
2,4,4-trimethyl-1-pentene	8.80×10^{-6}	NA	8.08×10^{-3}
2,4-dimethylpentane	1.40×10^{-6}	NA	1.29×10^{-3}
2,5-dimethylhexane	4.20×10^{-6}	NA	3.86×10^{-3}
2,5-dimethylthiophene	1.20×10^{-6}	NA	1.10×10^{-3}
2-butanone	4.00×10^{-6}	5,900	3.67×10^{-3}
2-butyne	2.00×10^{-6}	NA	1.84×10^{-3}
2-methyl-2-butene	4.50×10^{-6}	NA	4.13×10^{-3}
3-methylheptane	1.50×10^{-5}	NA	1.38×10^{-2}
3-methylhexane	1.60×10^{-5}	NA	1.47×10^{-2}
3-methylpentane	2.60×10^{-6}	7,000	2.39×10^{-3}
4-nonene	3.30×10^{-6}	NA	3.03×10^{-3}
A-pinene	1.00×10^{-4}	NA	9.18×10^{-2}
Acetone	1.70×10^{-5}	5,900	1.56×10^{-2}
Acetyaldehyde	6.50×10^{-6}	900	5.97×10^{-3}
B-pinene	1.60×10^{-5}	NA	1.47×10^{-2}

Table D.1–31. Toxic Pollutant Emissions from Open Burning of JP-8 Fuel at the Lurance Canyon Burn Site Under the No Action and Expanded Operations Alternatives (continued)

POLLUTANT	EMISSION FACTOR (g/g)	OEL/100 (µg/m^3)	ESTIMATED 8-HOUR CONCENTRATION (µg/m^3)
Benzene	2.00×10^{-3}	3.2	1.84
Benzyl chloride	2.70×10^{-5}	50	2.48×10^{-2}
Bischloroethyl ether	5.00×10^{-6}	290	4.59×10^{-3}
C-2-butene	5.10×10^{-6}	NA	4.68×10^{-3}
C-2-pentene	2.10×10^{-6}	NA	1.93×10^{-3}
C-3-methyl-2-pentene	1.80×10^{-7}	NA	1.65×10^{-4}
Chloromethane	1.50×10^{-6}	1,030	1.38×10^{-3}
Cyclohexanone	1.90×10^{-5}	1,000	1.74×10^{-2}
Cyclopentene	2.00×10^{-6}	NA	1.84×10^{-3}
Dibromochloromethane	4.60×10^{-6}	NA	4.22×10^{-3}
Dichlorodifluoromethane	9.40×10^{-7}	49,500	8.63×10^{-4}
Ethanol	3.50×10^{-5}	18,800	3.21×10^{-2}
Ethylbenzene	3.50×10^{-5}	4,340	3.21×10^{-2}
Heptanal	2.30×10^{-6}	NA	2.11×10^{-3}
Hexachloro-1,3-butadiene	2.30×10^{-6}	2.1	2.11×10^{-3}
Hexanal	5.90×10^{-5}	NA	5.42×10^{-2}
Indan	3.40×10^{-6}	NA	3.12×10^{-3}
Indene	3.80×10^{-4}	450	3.49×10^{-1}
Isobutene	1.10×10^{-4}	NA	1.01×10^{-1}
Isobutylbenzene	5.00×10^{-6}	NA	4.59×10^{-3}
Isoheptane	1.10×10^{-5}	NA	1.01×10^{-2}
Isopentane	3.30×10^{-6}	NA	3.03×10^{-3}
Isopentyl mercaptan	2.70×10^{-6}	NA	2.48×10^{-3}
Isoprene	1.70×10^{-5}	NA	1.56×10^{-2}
Isopropylbenzene	5.10×10^{-6}	2,450	4.68×10^{-3}
Isovaleraldehyde	3.30×10^{-4}	NA	3.03×10^{-1}
Limonene	6.00×10^{-5}	NA	5.51×10^{-2}
M-diethylbenzene	7.00×10^{-5}	NA	6.43×10^{-2}
M-thyltoluene	2.80×10^{-5}	NA	2.57×10^{-2}
Methanol	7.70×10^{-6}	2,600	7.07×10^{-3}
Methylcyclohexane	8.90×10^{-5}	16,000	8.17×10^{-2}

Table D.1–31. Toxic Pollutant Emissions from Open Burning of JP-8 Fuel at the Lurance Canyon Burn Site Under the No Action and Expanded Operations Alternatives (concluded)

POLLUTANT	EMISSION FACTOR (g/g)	OEL/100 ($\mu g/m^3$)	ESTIMATED 8-HOUR CONCENTRATION ($\mu g/m^3$)
Methylcyclopentane	1.90×10^{-5}	NA	1.74×10^{-2}
Methylcyclopentene	1.80×10^{-7}	NA	1.65×10^{-4}
Methylene chloride	1.20×10^{-7}	1,740	1.10×10^{-4}
Methylisobutylketone	8.40×10^{-6}	820	7.71×10^{-3}
N-butylbenzene	9.10×10^{-5}	NA	8.35×10^{-2}
N-decane	4.10×10^{-4}	NA	3.76×10^{-1}
N-heptane	2.90×10^{-5}	3,500	2.66×10^{-2}
N-hexane	6.80×10^{-6}	1,760	6.24×10^{-3}
N-nonane	6.20×10^{-5}	10,500	5.69×10^{-2}
N-octane	4.70×10^{-5}	3,500	4.31×10^{-2}
N-propylbenzene	4.50×10^{-5}	NA	4.13×10^{-2}
N-undecane	1.10×10^{-3}	NA	1.01
Napthalene	1.20×10^{-3}	500	1.10
O-ethyltoluene	4.70×10^{-5}	NA	4.31×10^{-2}
O-xylene	3.90×10^{-5}	4,340	3.58×10^{-2}
P-diethylbenzene	1.20×10^{-4}	NA	1.10×10^{-1}
P-ethyltoluene	1.30×10^{-5}	NA	1.19×10^{-2}
P-isopropyltoluene	2.60×10^{-6}	NA	2.39×10^{-3}
P-xylene	1.90×10^{-4}	4,340	1.74×10^{-1}
Propane	4.80×10^{-7}	18,000	4.41×10^{-4}
Styrene	2.90×10^{-4}	850	2.66×10^{-1}
T-2-butene	1.00×10^{-4}	NA	9.18×10^{-2}
T-2-pentene	3.30×10^{-6}	NA	3.03×10^{-3}
Tetrahydrothiophene	7.70×10^{-8}	NA	7.07×10^{-5}
Toluene	3.30×10^{-4}	1,880	3.03×10^{-1}
Trichloroethylene	3.10×10^{-6}	2,690	2.85×10^{-3}
Vinyl chloride	2.20×10^{-5}	130	2.02×10^{-2}

Sources: ACGIH 1997, Bjorklund et al. 1997
g/g: grams of pollutant per gram of JP-8 fuel
lb/gal: pounds per gallon
$\mu g/m^3$: micrograms per cubic meter

NA: Not available
OEL: occupational exposure limit
Notes: 1) The nearest distance from burn site to boundary: 3,050 meters
2) JP-8 density: 6.67 lb/gal
3) *OBODM*-predicted 1-hour decontamination factor (DF): 7.3439×10^3 $\mu g/m^3$/1,000 gal JP-8
4) See text in D.1.5

D.2 RADIOLOGICAL AIR QUALITY

This section presents detailed information on the methodology and data used to calculate the potential radiological doses associated with radiological air emissions during normal operations under the No Action, Expanded Operations, and Reduced Operations Alternatives.

The radiological dose to the maximally exposed individual (MEI) and collective dose to the population within 50 mi of SNL/NM, due to the radiological air emissions from routine SNL/NM facility operations, was evaluated. This evaluation is required to show compliance with the National Emissions Standard for Hazardous Air Pollutants (NESHAP), which limits public dose received from radiological material released to the atmosphere to 10 millirems (mrem)/year (yr), in addition to natural background and medical radiation doses normally received.

All SNL/NM facilities that have the potential for radiological emissions were reviewed. Based on historic SNL/NM radionuclide emissions data and NESHAP compliance reports, 10 facilities in 5 TAs were considered for modeling potential radiological impacts (Figure D.2–1). Based on the review of historical reported doses from NESHAPS, other facilities that would not contribute more than 0.01 mrem/yr (0.1 percent of the NESHAP limit) to the MEI were screened from further consideration. These 10 facilities are also part of the 33 facilities identified in Chapter 2 as "selected" facilities for examination in the SWEIS. They include the following:

- Annular Core Research Reactor (ACRR)—Defense Programs (DP) configuration
- ACRR—medical isotopes production configuration
- Sandia Pulsed Reactor (SPR)
- Hot Cell Facility (HCF)
- Radioactive and Mixed Waste Management Facility (RMWMF)
- Mixed Waste Landfill (MWL)
- High-Energy Radiation Megavolt Electron Source III (HERMES III)
- Radiographic Integrated Test Stand (RITS)
- Explosive Components Facility (ECF)
- Neutron Generator Facility (NGF)

The ACRR could be operated under either DP configuration or medical isotopes production configuration. For purposes of this evaluation and to ensure conservative results, the facility was assumed to be operating under both configurations simultaneously.

TA-V was selected as the center of the 50-mi ROI for all facilities (where modeled releases to the environment would result in a calculated dose to the population). It was selected because the majority of radiological emissions would be from the HCF in TA-V and TA-V has historically been addressed in annual NESHAP compliance reports.

The radiological impacts of normal operations of each alternative, based on estimated radionuclide emissions, were calculated by using the *CAP88-PC* computer model, which is being used for demonstrating NESHAP compliance (DOE 1997e). *CAP88-PC* is an improved version of its predecessor computer code, *AIRDOS-EPA*. In *CAP88-PC*, a modified Gaussian plume equation is used to estimate both horizontal and vertical air dispersion of as many as 20 radionuclides released from 1-to-6 stacks. The model calculates exposure to radionuclide releases that can occur through external (air immersion and surface ground-shine) and internal (inhalation and ingestion) pathways.

The external dose is from exposure to a cloud of radiation passing over the receptor who is standing on ground that is contaminated with radioactive material. The appropriate dose quantity is called the effective dose equivalent (EDE). The internal dose arises from a radiation source entering the human body through ingestion of contaminated food and water and inhalation of contaminated air. The pathways for internal exposure include ingestion of crops contaminated by airborne radiation that has been deposited on the crops and ingestion of food products from animals that have ingested contaminated food. This is the internal dose that each body receives from a "1-year intake." The integral of the dose rate over the years (that is, 50 years) gives the committed EDE. The sum of the two dose quantities from external and internal pathways is presented in the SWEIS as the total EDE (TEDE), pursuant to U.S. Department of Energy (DOE) 5400.1.

Rates of ingestion of radionuclides are based on the terrestrial transport model of the *U.S. Nuclear Regulatory Commission's Regulatory Guide 1.109* food chain model (NRC 1977a). Dose conversion factors are derived from data generated by the *DARTAB* model, an integral part of *CAP88-PC*, which follow the methodology of the

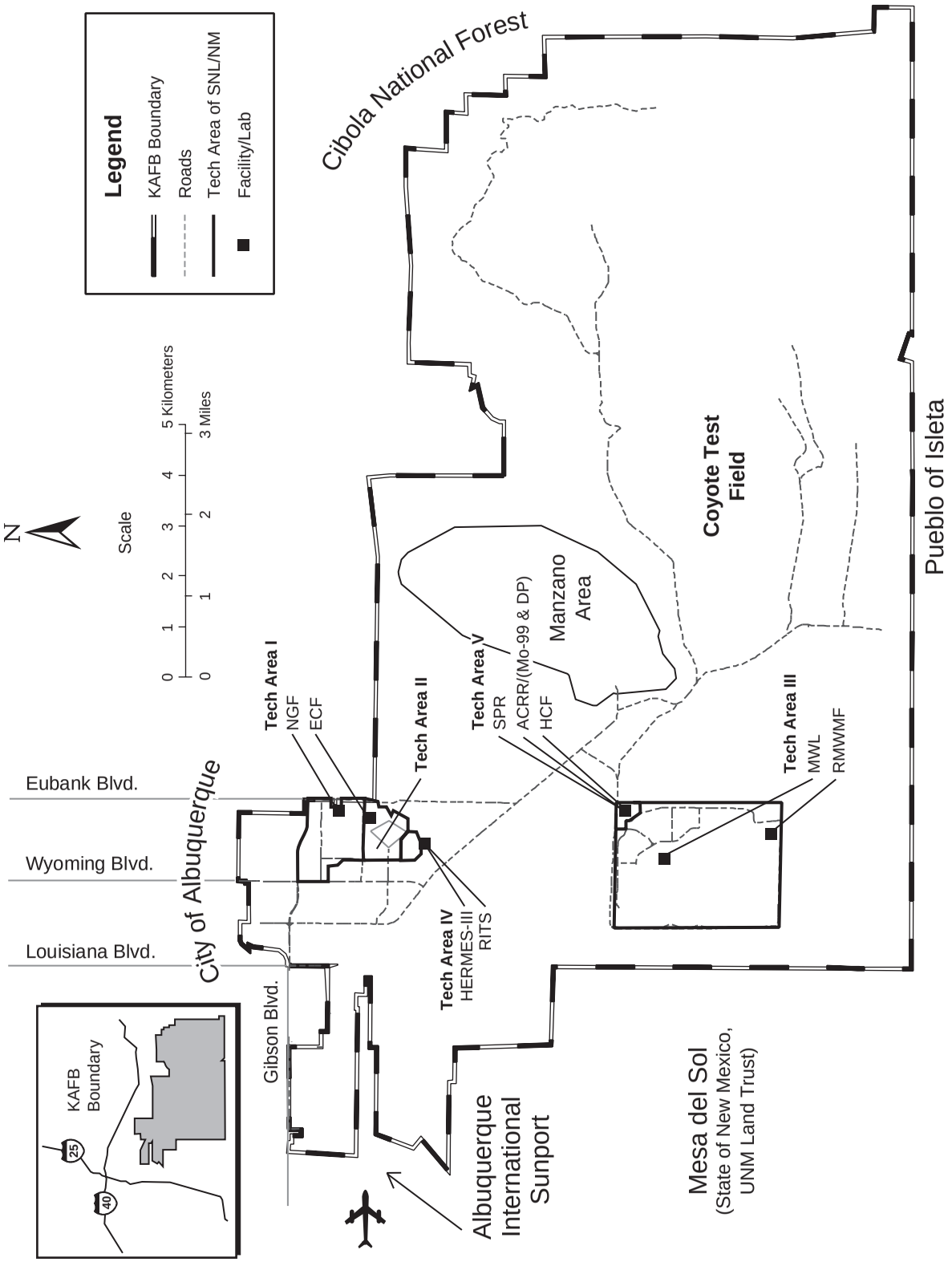

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Figure D.2–1. SNL/NM Facilities that Release Radionuclides

The 10 analyzed SNL/NM facilities that release radionuclides are in 5 Technical Areas.

International Commission for Radiation Protection (ICRP). These are the components built into the execution of the *CAP88-PC* model.

In performing the dose calculations using the *CAP88-PC* model, the following types of data are used:

- *Emissions Data*—The estimated radiological emissions from each of the 10 SNL/NM facilities under each alternative are extracted from SNL/NM facility source documents (SNL/NM 1998a) and used in the dose evaluations. Table D.2–1 presents the radiological emissions data from these 10 sources for the No Action, Expanded Operations, and Reduced Operations Alternatives. The radiological emissions from each facility are estimated based on SNL/NM planned operations and tests projected into the future under each alternative. The details are available in the SNL/NM facility source documents (SNL/NM 1998a). The ACRR and HCF emissions for the base year 1996 are different due to refurbishing operations to change over to medical isotopes production configuration. The SPR emissions are estimated to be higher than the base year. This is due to instituting NESHAP requirements for "confirmatory measurements" of radiological air emissions, where measured emission factors were determined for both the SPR and the ACRR. These measured emission factors were found to be higher than the calculated emissions factors. These measurements are source-specific to the SPR and ACRR and would not affect the calculations and measurements for other facilities.
- *Source Parameters Data*—Facility releases, which are point sources, occur from stack exhausts or vents. For these releases, the *CAP88-PC* model calculates a momentum-type plume rise. Plume rise is calculated from the stack diameter and exhaust velocity. The MWL is an area facility and is assumed to be a ground-level release with no exhaust parameters. Therefore, *CAP88-PC* uses a ground release height. Table D.2–2 presents the source parameters.
- *Meteorological Data*—Three years (1994-1996) of meteorological data, including wind speed, wind direction, and stability, are used by SNL/NM to create a stability array (STAR) data file for each of four monitoring towers (CW1, A21, A36, and MW1) (Figure D.2–2). These SNL/NM-supplied meteorological data were used by the *CAP88-PC* model to calculate the doses. The meteorological data from the nearest representative meteorological tower to the source being evaluated were used to calculate the dose to the MEI and the population within 50 mi. Meteorological data from tower A36 were used to model the ACRR, HCF, and SPR. Meteorological data from tower A21 were used to model the HERMES III, RITS, ECF, and NGF. Meteorological data from tower MW1 were used to model the MWL. The RMWMF was modeled using meteorological data from tower CW1.

  In addition, annual average temperature and precipitation data recorded by SNL/NM at these towers were used to calculate composite three-year average temperature and precipitation and further used as input to the *CAP88-PC*. Precipitation is measured only at towers A36 and A21. The composite average precipitation value calculated from A36 is assumed to be representative of towers MW1 and CW1.

  The composite average temperatures for towers A36, A21, MW1, and CW1 are 14.6, 14.3, 14.3, and 14.2 degrees Celsius (°C), respectively. The composite average precipitation levels at towers A36 and A21 are 26.3 and 24.4 cm/yr, respectively. The mixing height, based on Sunport meteorological data that is used in the NESHAP report (SNL/NM 1996u), 2,055 m above ground level, is used as input to the *CAP88-PC*.
- *Demographic Data*—Demographic data include population, numbers of beef and dairy cattle, and the area of food crop harvesting. Although the *CAP88-PC* model contains default demographic data for the Albuquerque area, based on site-wide demographic averages, SNL/NM generated a more accurate data set based on available data on a per-county basis (SNL/NM 1996u). These data, within 5 equal segments for each wind direction (total 80 equal segments spaced to cover a 50-mi radius, including 16 wind direction subdivisions) were used by SNL/NM.

  SNL/NM estimated population based on 1994-1995 population data and estimated agricultural data obtained from the U.S. Department of Commerce (SNL/NM 1996u). These data were also used in the *CAP88-PC* model. SNL/NM does not have any onsite agricultural production; only agricultural data beyond the site boundary to a 50-mi radius were considered in the impact evaluation.

  Table D.2–3 presents population distribution. The densities of beef and dairy cattle within the 50-mi radius of SNL/NM were 2.016 beef cattle per square kilometer and 0.554 dairy cattle per square kilometer (SNL/NM 1996u).

Table D.2–1. Radiological Emissions from Sources at SNL/NM

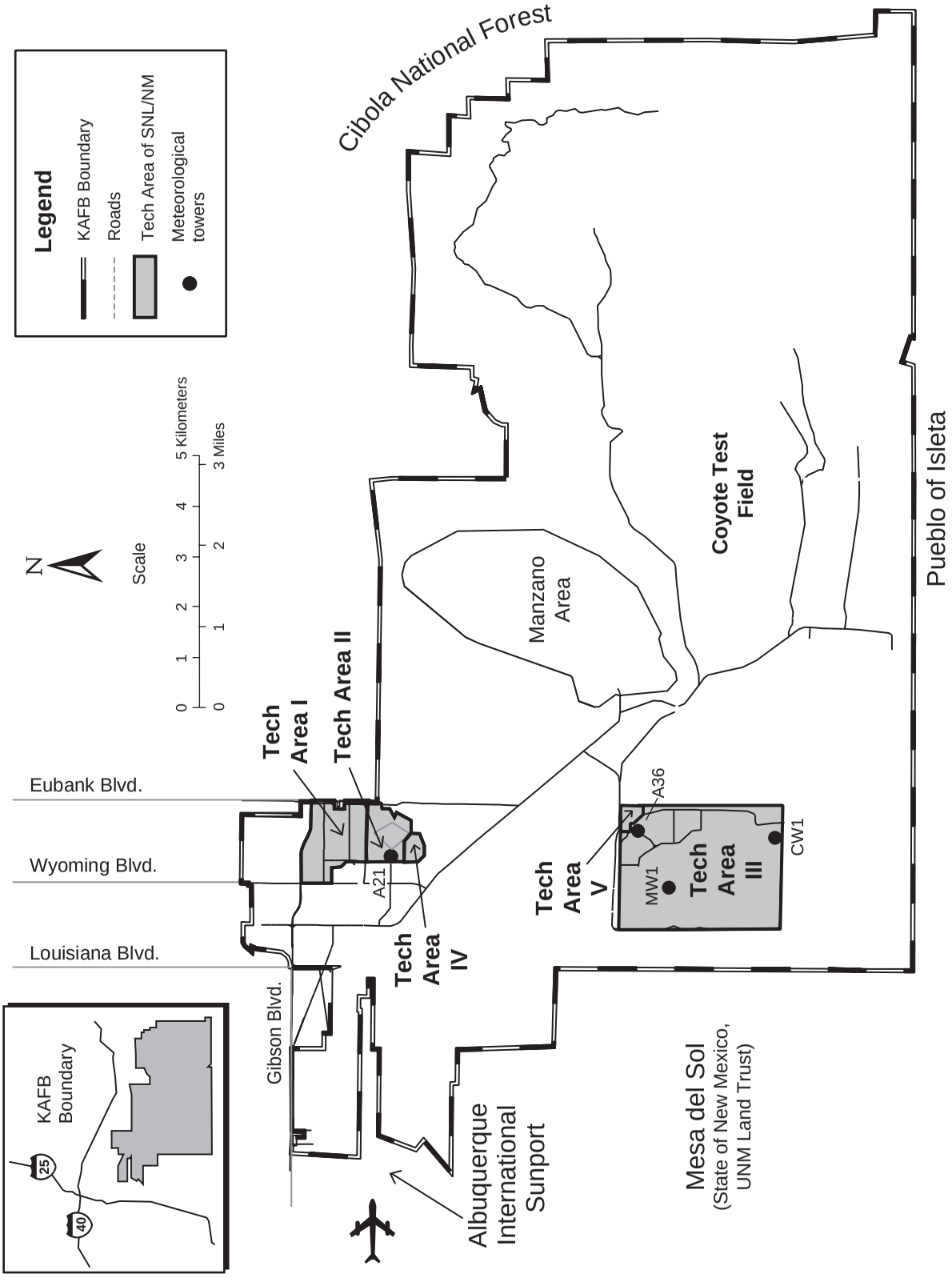
FACILITY NAME	TECHNICAL AREA	RADIONUCLIDE[a]	NO ACTION RELEASE (Ci/yr)	EXPANDED OPERATIONS RELEASE (Ci/yr)	REDUCED OPERATIONS RELEASE (Ci/yr)
Annular Core Research Reactor, Building 6588 (ACRR, DP configuration)	V	Argon-41	2.6	7.8	0
Annular Core Research Reactor, Building 6588 (ACRR, medical isotopes production configuration)	V	Argon-41 Tritium	1.1 1.1	2.2 2.2	0.24 0.24
Explosive Components Facility, Building 905 (ECF)	II	Tritium	$2.0x10^{-3}$	$2.0x-10^{-3}$	$2.0x10^{-3}$
High-Energy Radiation Megavolt Electron Source III, Building 970 (HERMES III)	IV	Nitrogen-13 Oxygen-15	$1.245x10^{-3}$ $1.245x10^{-4}$	$3.603x10^{-3}$ $3.603x10^{-4}$	$1.0x10^{-4}$ $1.0x10^{-5}$
Hot Cell Facility, Building 6580 (HCF)	V	Iodine-131 Iodine-132 Iodine-133 Iodine-134 Iodine-135 Krypton-83m Krypton-85 Krypton-85m Krypton-87 Krypton-88 Xenon-131m Xenon-133 Xenon-133m Xenon-135 Xenon-135m	1.17 3.0 5.4 0.22 3.3 198.0 0.19 290.0 57.0 480.0 1.8 2,160.0 102.0 2,070.0 360.0	3.90 10.0 18.0 0.72 11.0 660.0 0.63 970.0 190.0 1,600.0 5.9 7,200.0 340.0 6,900.0 1,200.0	0.117 0.3 0.54 0.022 0.33 19.8 0.019 29.0 5.7 48.0 0.18 216.0 10.2 207.0 36.0
Mixed Waste Landfill (MWL)	III	Tritium	0.29	0.29	0.29
Neutron Generator Facility, Building 870 (NGF)	I	Tritium	156	156	156
Radioactive and Mixed Waste Management Facility, Building 6920 (RMWMF)	III	Tritium	2.203[b]	2.203[b]	2.203[b]
Radiographic Integrated Test Stand, Building 970 (RITS)	IV	Nitrogen-13	0.12	0.16	0.02
Sandia Pulsed Reactor (SPR), Building 6590	V	Argon-41	9.5	30.0	2.85

Source: SNL/NM 1998a
Ci/yr: Curies per year
DP: Defense Programs
SNL/NM: Sandia National Laboratories/New Mexico
[a] Radionuclide emissions presented in this table represent projections based on activity forecasts and do not match historical emissions due to changing activities and programs.
[b] Because SNL/California tritium-contaminated oils handled at the RMWMF during the base year were abnormally high, this maximum level of emissions is assumed to be released in any year and, therefore, is constant for all alternatives.

Table D.2–2. Release Parameters for SNL/NM Facilities

FACILITY	RELEASE HEIGHT (m)	STACK DIAMETER (m)	RELEASE TEMPERATURE (°C)	EXHAUST VELOCITY (m/sec)	PLUME RISE
Annular Core Research Reactor (ACRR DP configuration)	16.5	0.20	21	11.1	Momentum
Annular Core Research Reactor (ACRR medical isotopes production configuration)	16.5	0.20	21	11.1	Momentum
Explosive Components Facility (ECF)	3.0	0.5	21	15.4	Momentum
High-Energy Radiation Megavolt Electron Source III (HERMES III)	13.5	0.46	13	7.64	Momentum
Hot Cell Facility (HCF)	38.1	1.8	21	8.7	Momentum
Mixed Waste Landfill (MWL)	0.0	0.00	21	0.00	Zero
Neutron Generator Facility (NGF)	10.6	0.305	21	10.8	Momentum
Radioactive and Mixed Waste Management Facility (RMWMF)	16.8	0.61	19.3	11.2	Momentum
Radiographic Integrated Test Stand (RITS)	13.5	0.46	13	7.64	Momentum
Sandia Pulsed Reactor (SPR)	8.2	0.54	21	38.6	Momentum

Source: SNL/NM 1996u
°C: degrees Celsius
Ci/yr: Curies per year
DP: Defense Programs
m: meter
m/sec: meters per second
SNL/NM: Sandia National Laboratories/New Mexico



Source: SNL/NM 1996u

Figure D.2–2. Locations of Meteorological Towers Closest to Selected Facilities

Data from the meteorological monitoring towers closest to the selected facility were input for modeling.

Table D.2–3. SNL/NM Population Distribution Within 50 Miles (80 km)

DIRECTION / DISTANCE	POPULATION				
	10 mile (16 km)	20 mile (32 km)	30 mile (48 km)	40 mile (64 km)	50 mile (80 km)
N	40,341	33,537	1,929	2,700	3,472
NNW	39,593	98,185	1,929	3,195	3,472
NW	36,716	97,694	4,623	2,700	3,472
WNW	21,134	32,848	11,807	8,788	1,434
W	17,510	9,127	11,508	3,168	640
WSW	26,087	6,445	6,933	6,130	1,535
SW	10,846	3,105	4,622	5,493	1,855
SSW	1,889	10,092	16,438	2,631	196
S	1,472	2,773	4,373	3,882	233
SSE	1,585	951	1,345	534	592
SE	2,110	267	329	461	592
ESE	2,354	6,274	3,001	461	592
E	2,354	4,936	2,823	1,346	1,550
ENE	2,354	6,084	2,765	3,853	4,741
NE	4,327	7,254	3,271	3,853	4,954
NNE	28,405	8,794	1,929	2,969	4,261

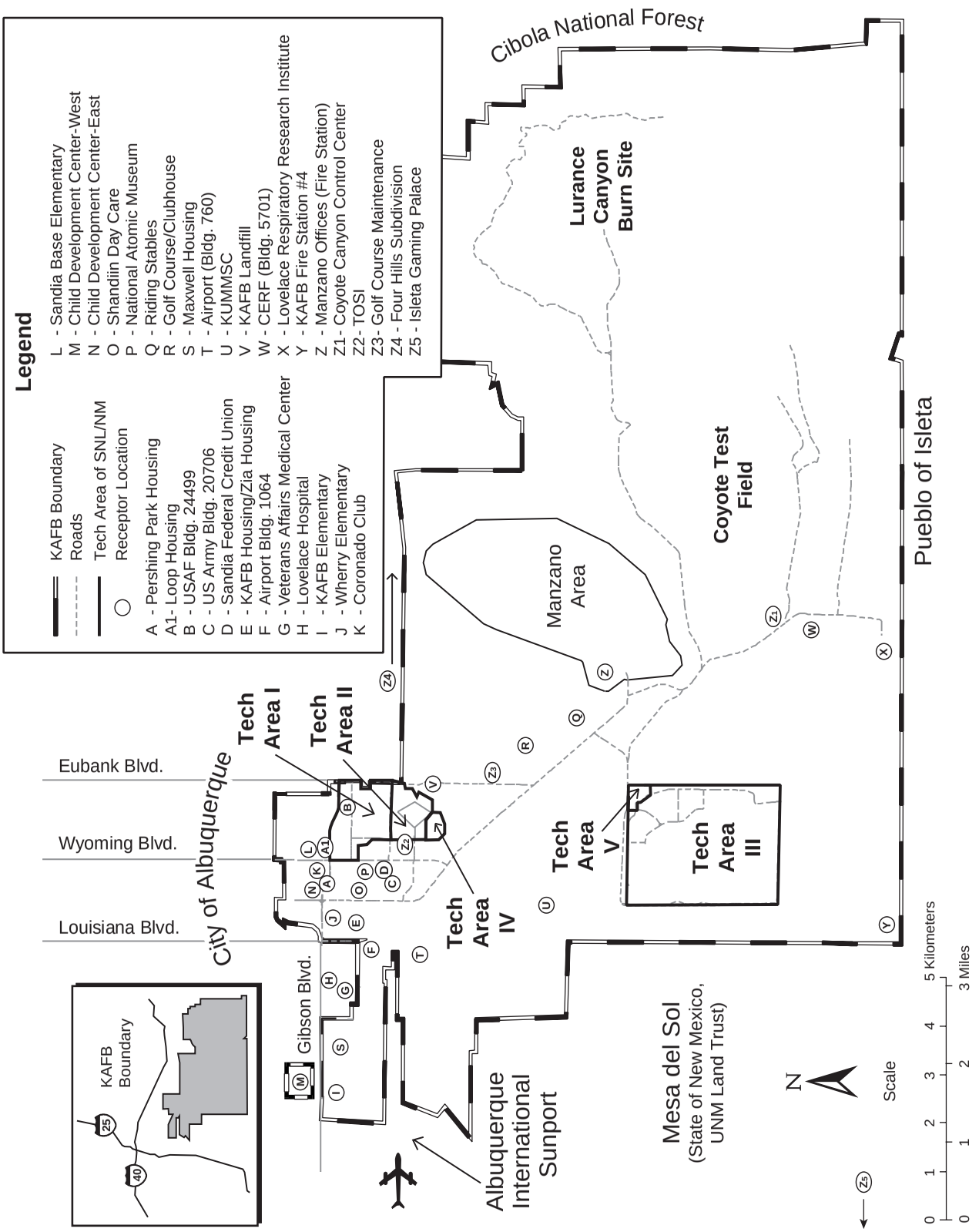
Source: SNL/NM 1996u
km: kilometers

- *Receptor Locations*—Fourteen core receptor locations were considered in evaluating the impacts due to routine operations at SNL/NM. These receptor locations were selected based on the review of the NESHAP compliance reports for the public MEI, SNL/NM site information documents, and receptor locations that are in close proximity to the sources, site boundary, or are in prevailing wind directions and that represent children, sick, and elderly (schools, day care centers and hospitals). These 14 core receptors are the Child Development Center-East, Child Development Center-West, Coronado Club, Golf Course (Clubhouse), Kirtland Elementary School, KAFB Housing (Zia Park Housing), KUMMSC, Lovelace Hospital, National Atomic Museum, Riding Stables, Sandia Base Elementary School, Shandiin Day Care Center, Veterans Affairs Medical Center (Hospital), and Wherry Elementary School. In addition, two receptors of public concern representing Four Hills Subdivision and Isleta Gaming Palace, which are farther away from SNL/NM, were also evaluated. Because the general public and Air Force personnel have access to SNL/NM, 14 core receptor locations and 2 offsite receptor locations of public concern were considered for dose impact evaluation. Based on NESHAP reports, 16 onsite as well as 6 offsite additional receptor locations, which have been historically considered for annual NESHAP reports, were also evaluated (SNL/NM 1996u). A total of 38 receptor locations was considered for dose impact evaluation. The concept of an onsite potential MEI receptor was conservatively assumed to include members of the military, their dependents, contractors, and other non SNL/NM personnel who have access to locations around KAFB. Offsite receptors include members of the public who are not physically located on Federal properties, which include SNL/NM, DOE, and KAFB lands. Public areas surrounding SNL/NM and adjoining military and DOE lands were surveyed for actual public residents and workers. Public lands include city, county, Bureau of Land Management (BLM), Native American, national forest, and other private and

nonrestricted Federal lands. Thirty-two of a total of 38 receptor locations, representing core receptors, 22 offsite receptors of public concern, and 16 onsite NESHAP considered receptors, are shown on Figure D.2–3. Tables D.2–4, D.2–5, and D.2–6 present the 38 NESHAP, core, and offsite receptors, along with distances and directions from each of the 10 selected SNL/NM facilities/ sources that are modeled.

The model-calculated dose contributions, including external, inhalation, and ingestion exposure pathways from each of the 10 facilities/sources calculated individually at each receptor location, were combined to determine the overall SNL/NM site-wide normal operations dose to the MEI, for each alternative. The maximum TEDE was calculated from all exposure pathways from all sources to the MEI under each alternative. The EDE contributions from each of the sources to each of the receptor locations under the No Action Alternative, Expanded Operations Alternative, and Reduced Operations Alternative are presented in Tables D.2–7, D.2–8, and D.2–9, respectively.

Dose assessment results are summarized in Table D.2–10. The total doses (TEDE) from all exposure pathways and all modeled sources to the MEI are 0.15 mrem/yr under the No Action Alternative, 0.51 mrem/yr under the Expanded Operations Alternative, and 0.02 mrem/yr under the Reduced Operations Alternative. The calculated MEI dose for each alternative is much lower than the regulatory limit of 10 mrem/yr from the air pathways, and small compared to the background radiation dose of 360 mrem/yr. The calculated collective doses to population within 50 mi are 5.0 person-rem/yr under the No Action Alternative, 15.8 person-rem/yr under the Expanded Operations Alternative; and 0.80 person-rem/yr under the Reduced Operations Alternative. The calculated annual collective dose from SNL/NM operations under each alternative (5.0, 15.8, and 0.80 person-rem/yr, respectively) to the population within 50 mi would be much lower than the annual 263,700-person-rem collective dose to the population from background radiation (Figure 4.10–2).



Source: SNL/NM 1996u

Figure D.2–3. Locations of Onsite and Near-Site Receptors

Thirty-two onsite or near-site receptors are among a total of 38 that were evaluated for potential impacts.

Table D.2–4. Distance (Meters) and Direction to NESHAP-Considered Receptor Locations from SNL/NM

FACILITY	NGF (BLDG. 870)	ECF (BLDG. 905)	MWL	RMWMF (BLDG. 6920)	RITS AND HERMES III (BLDG. 970)	HCF (BLDG. 6580)	ACRR (BLDG. 6588)	SPR (BLDG. 6590)
Building 20706	990 SSW	1,212 W	5,928 N	8,281 N	1,466 NNW	5,350 NNW	5,386 NNW	5,487 NNW
Building 24499	900 NNE	1,156 N	7,061 N	9,289 N	2,316 NNE	6,239 N	6,280 N	6,386 N
Civil Engineering Research Facility (Bldg. 5701)	10,203 SSE	9,767 SSE	5,465 SE	3,857 ESE	8,885 SSE	5,248 SE	5,228 SE	5,152 SE
Coyote Canyon Control Center	9,873 SSE	9,422 SSE	5,663 ESE	4,391 E	8,615 SE	5,244 SE	5,231 SE	5,169 SE
Golf Course Maintenance Area	2,911 SSE	2,470 SSE	3,675 NNE	5,766 N	1,550 SE	2,708 N	2,751 N	2,856 N
Lovelace Respiratory Research Institute	11,523 SSE	11,092 SSE	6,313 SE	4,282 SE	10,156 SSE	6,335 SSE	6,309 SSE	6,220 SSE
KAFB Firestation #4 (Bldg. 9002)	11,403 SSW	11,159 SSW	5,332 SSW	3,742 SW	9,859 SSW	6,418 SSW	6,374 SSW	6,278 SSW
KAFB Landfill	1,650 SSE	1,163 SSE	4,918 NNE	7,084 N	747 E	4,027 N	4,068 N	4,174 N
Loop Housing	1,080 NW	1,568 NW	7,097 N	9,428 N	2,438 NNW	6,450 N	6,487 N	6,591 N
Manzano Offices (Fire Station)	5,851 SSE	5,364 SSE	3,704 ENE	4,510 NE	4,646 SE	2,563 ENE	2,587 ENE	2,613 ENE
Maxwell Housing	4,921 W	5,298 WNW	8,240 NW	10,562 NNW	5,338 WNW	8,219 NW	8,240 NW	8,318 NW
Pershing Park Housing	1,770 NW	2,270 NW	7,773 N	10,118 N	3,153 NNW	7,155 NNW	7,192 NNW	7,295 N
Sandia Federal Credit Union	870 W	1,147 SW	6,439 N	8,785 N	1,873 NNW	5,834 NNW	5,870 NNW	5,972 NNW
Sunport (Bldg. 760)	2,941 SW	3,100 W	5,778 NNW	8,159 NNW	2,783 WNW	5,601 NW	5,625 NW	5,710 NNW

Table D.2–4. Distance (Meters) and Direction to NESHAP-Considered Receptor Locations from SNL/NM (concluded)

FACILITY	NGF (BLDG. 870)	ECF (BLDG. 905)	MWL	RMWMF (BLDG. 6920)	RITS AND HERMES III (BLDG. 970)	HCF (BLDG. 6580)	ACRR (BLDG. 6588)	SPR (BLDG. 6590)
Sunport (Bldg. 1064)	2,851 W	3,180 W	6,740 NNW	9,128 NNW	3,226 WNW	6,488 NNW	6,515 NNW	6,605 NNW
Technical Onsite Inspection Facility	1,290 SSW	4,385 SSE	5,099 N	7,431 N	642 NW	4,475 NNW	4,511 NNW	4,613 NNW

Source: SNL/NM 1996u
ACRR: Annular Core Research Reactor
ECF: Explosive Components Facility
HCF: Hot Cell Facility
HERMES III: High-Energy Radiation Megavolt Electron Source III
KAFB: Kirtland Air Force Base
MWL: Mixed Waste Landfill
NGF: Neutron Generator Facility
RITS: Radiographic Integrated Test Stand
RMWMF: Radioactive and Mixed Waste Management Facility
SPR: Sandia Pulsed Reactor

Table D.2–5. Distance (Meters) and Direction to Core Receptor Locations from SNL/NM

FACILITY	NGF (BLDG. 870)	ECF (BLDG. 905)	MWL	RMWMF (BLDG. 6920)	RITS AND HERMES-III (BLDG. 970)	HCF (BLDG. 6580)	ACRR (BLDG. 6588)	SPR (BLDG. 6590)
Child Development Center-East	1,729 NW	2,455 NW	6,683 NNW	9,749 N	2,927 NNW	6,898 NNW	6,898 NNW	6,898 NNW
Child Development Center-West	5,487 WNW	6,094 WNW	8,653 NW	11,266 NNW	6,031 WNW	8,984 NW	8,984 NW	8,984 NW
Coronado Club	1,528 NW	2,268 NW	6,630 NNE	9,732 N	2,803 NNW	6,862 NNW	6,862 NNW	6,862 NNW
Golf Course Clubhouse[a]	3,751 SSE	3,289 SSE	3,092 NNE	5,037 N	2,360 SSE	2,004 NNE	2,048 NNE	2,150 NNE
Kirtland Elementary School	5,920 W	6,489 WNW	8,784 NW	11,309 NNW	6,341 WNW	9,107 NW	9,107 NW	9,107 NW
Kirtland Underground Munitions and Maintenance Storage Complex (KUMMSC)[a]	4,321 S	3,973 SSW	2,036 N	4,414 NNW	2,811 SSW	1,770 NW	1,798 NW	1,866 NW
Lovelace Hospital	3,764 WNW	4,386 WNW	7,364 NNW	10,185 NNW	4,454 NNW	7,644 NNW	7,644 NNW	7,644 NNW
National Atomic Museum	1,120 WNW	1,767 WNW	5,835 NNW	8,937 N	2,079 NNW	6,065 NNW	6,065 NNW	6,065 NNW
Riding Stables[a]	4,861 SSE	1,276 WNW	2,985 NE	4,421 NNE	3,543 SE	1,754 NE	1,791 NE	1,859 NE
Sandia Base Elementary	1,572 NNW	2,307 NW 2,297 NNW	6,817 NNE	9,921 NNW	2,961 NNW	7,176 N	7,176 N	7,176 N
Shandiin Day Care Center	1,670 W 1,673 WNW	2,279 WNW	5,981 NNW	9,026 N	2,432 NW	6,240 NNW	6,240 NNW	6,240 NNW
Veterans Affairs Medical Center	3,623 W 3,650 WNW	4,212 WNW	6,936 NNW	9,783 NNW	3,964 NW	7,372 NW 7,201 NNW	7,372 NW 7,201 NNW	7,372 NW 7,201 NNW
Wherry Elementary School	2,124 WNW	2,861 WNW 2,860 NW	6,881 NNW	9,739 NNW	3,091 NW	6,997 NNW	6,997 NNW	6,997 NNW
Zia Park Housing[a]	1,860 W	2,171 W	6,351 NNW	8,739 NWW	2,331 NW	5,934 NNW	5,965 NNW	6,061 NNW

Source: SNL/NM 1996u
ACRR: Annular Core Research Reactor
ECF: Explosive Components Facility
HCF: Hot Cell Facility
HERMES III: High-Energy Radiation Megavolt Electron Source III
MWL: Mixed Waste Landfill
NGF: Neutron Generator Facility
RITS: Radiographic Integrated Test Stand
RMWMF: Radioactive and Mixed Waste Management Facility
SPR: Sandia Pulsed Reactor
[a] Also a NESHAP-considered receptor location

Table D.2–6. Distance (Meters) and Direction to Offsite Receptor Locations From SNL/NM

FACILITY	NGF (BLDG. 870)	ECF (BLDG. 905)	MWL	RMWMF (BLDG. 6920)	RITS AND HERMES III (BLDG. 970)	HCF (BLDG. 6580)	ACRR (BLDG. 6588)	SPR (BLDG. 6590)
Albuquerque City Offices	6,212 SW	6,269 WSW	5,528 WNW	7,472 NW	5,510 WSW	6,084 WNW	6,083 WNW	6,118 WNW
East Resident	18,695 ESE	18,352 NNE	17,917 E	17,291 E	18,294 ESE	16,991 E	16,836 E	16,998 E
Eubank Gate Area (Building 8895)	720 NE	862 ESE	6,746 N	8,960 N	2,022 NNE	5,908 N	5,949 N	6,055 N
Four Hills Subdivision	2,851 ESE	2,520 E	6,554 NNE	8,379 NNE	2,989 ENE	5,435 NNE	5,479 NNE	5,576 NNE
Isleta Gaming Palace	16,354 SW	16,309 SW	12,150 WSW	11,907 WSW	15,298 SW	13,366 WSW	13,332 WSW	13,278 WSW
Northeast Resident	7,562 ESE	7,199 ESE	8,340 ENE	8,999 NE	7,235 E	7,145 ENE	7,175 ENE	7,220 ENE
Seismic Center (USGS)	13,533 SE	13,099 SE	9,472 ESE	7,829 ESE	12,381 SE	9,123 SE	9,110 SE	9,045 SE
Tijeras Arroyo (West)	5,851 W	5,799 SW	4,224 WNW	6,184 NW	4,871 WSW	4,829 WNW	4,825 WNW	4,854 WNW

Source: SNL/NM 1996u
ACRR: Annular Core Research Reactor
ECF: Explosive Components Facility
HCF: Hot Cell Facility
HERMES III: High-Energy Radiation Megavolt Electron Source III
MWL: Mixed Waste Landfill
NGF: Neutron Generator Facility
RITS: Radiographic Integrated Test Stand
RMWMF: Radioactive and Mixed Waste Management Facility
SPR: Sandia Pulsed Reactor
USGS: U.S. Geological Survey

Table D.2–7. Summary of Dose Estimates to Each of the SNL/NM Receptors from No Action Alternative Emissions

RECEPTORS	SPR (Bldg. 6590)	ACRR (Mo-99) (Bldg. 6588)	ACRR (DP) (Bldg. 6588)	HCF (Bldg. 6580)	HERMES III (Bldg. 970)	MWL	RMWMF (Bldg. 6920)	ECF (Bldg. 905)	NGF (Bldg. 870)	RITS (Bldg. 970)	TOTAL
ONSITE and/or SPECIAL POTENTIAL MEI (mrem/yr)											
Building 20706	$1.5x10^{-4}$	$2.3x10^{-5}$	$4.4x10^{-5}$	$2.2x10^{-2}$	$7.3x10^{-8}$	$7.8x10^{-8}$	$2.3x10^{-6}$	$1.0x10^{-7}$	$5.6x10^{-3}$	$7.0x10^{-6}$	$2.8x10^{-2}$
Building 24499	$9.6x10^{-5}$	$1.5x10^{-5}$	$2.9x10^{-5}$	$1.4x10^{-2}$	$2.0x10^{-8}$	$6.7x10^{-7}$	$2.0x10^{-6}$	$7.3x10^{-8}$	$6.1x10^{-3}$	$2.0x10^{-6}$	$2.0x10^{-2}$
Civil Engineering Research Facility (Bldg. 5701)	$9.0x10^{-5}$	$1.4x10^{-5}$	$2.7x10^{-5}$	$1.2x10^{-2}$	$5.2x10^{-10}$	$6.8x10^{-7}$	$4.4x10^{-6}$	$2.1x10^{-9}$	$1.5x10^{-4}$	$5.2x10^{-6}$	$1.2x10^{-2}$
Child Development Center-East	$1.0x10^{-4}$	$1.5x10^{-5}$	$2.9x10^{-5}$	$1.5x10^{-2}$	$1.3x10^{-8}$	$8.3x10^{-7}$	$1.8x10^{-6}$	$2.9x10^{-8}$	$3.6x10^{-3}$	$1.3x10^{-6}$	$1.8x10^{-2}$
Child Development Center-West	$1.1x10^{-4}$	$1.7x10^{-5}$	$3.2x10^{-5}$	$1.8x10^{-2}$	$2.1x10^{-9}$	$8.4x10^{-7}$	$2.1x10^{-6}$	$8.3x10^{-9}$	$7.3x10^{-4}$	$2.0x10^{-7}$	$1.9x10^{-2}$
Coronado Club	$1.0x10^{-4}$	$1.5x10^{-5}$	$2.9x10^{-5}$	$1.5x10^{-2}$	$1.5x10^{-8}$	$6.3x10^{-7}$	$1.8x10^{-6}$	$3.2x10^{-8}$	$4.2x10^{-3}$	$1.4x10^{-6}$	$2.0x10^{-2}$
Coyote Canyon Control Center	$8.9x10^{-5}$	$1.4x10^{-5}$	$2.6x10^{-5}$	$1.2x10^{-2}$	$4.1x10^{-10}$	$5.7x10^{-7}$	$4.0x10^{-6}$	$2.2x10^{-9}$	$1.6x10^{-4}$	$3.9x10^{-8}$	$1.2x10^{-2}$
Golf Course Clubhouse	$5.4x10^{-4}$	$9.0x10^{-5}$	$1.8x10^{-4}$	$7.0x10^{-2}$	$2.1x10^{-8}$	$2.0x10^{-6}$	$4.7x10^{-6}$	$1.1x10^{-8}$	$6.7x10^{-4}$	$2.0x10^{-6}$	$7.2x10^{-2}$
Golf Course Maintenance Area	$3.4x10^{-4}$	$5.6x10^{-4}$	$1.1x10^{-4}$	$4.4x10^{-2}$	$3.8x10^{-8}$	$1.5x10^{-6}$	$3.9x10^{-6}$	$1.7x10^{-8}$	$9.7x10^{-4}$	$3.7x10^{-6}$	$4.5x10^{-2}$
Lovelace Respiratory Research Institute	$8.6x10^{-5}$	$1.3x10^{-5}$	$2.5x10^{-5}$	$1.2x10^{-2}$	$3.3x10^{-10}$	$5.5x10^{-10}$	$4.0x10^{-6}$	$1.8x10^{-8}$	$1.3x10^{-4}$	$3.2x10^{-8}$	$1.2x10^{-2}$
Kirtland Elementary School	$1.1x10^{-4}$	$1.6x10^{-5}$	$3.1x10^{-5}$	$1.8x10^{-2}$	$1.8x10^{-9}$	$8.2x10^{-7}$	$2.1x10^{-6}$	$7.6x10^{-9}$	$7.3x10^{-4}$	$1.7x10^{-7}$	$1.9x10^{-2}$
KAFB Firestation #4 (Bldg. 9002)	$1.3x10^{-4}$	$2.0x10^{-5}$	$3.7x10^{-5}$	$1.7x10^{-2}$	$1.6x10^{-10}$	$1.3x10^{-6}$	$9.8x1^{-6}$	$2.4x10^{-9}$	$1.8x10^{-4}$	$1.6x10^{-8}$	$1.7x10^{-2}$
KAFB Landfill	$1.9x10^{-4}$	$3.0x10^{-5}$	$5.9x10^{-5}$	$2.6x1^{-2}$	$1.5x10^{-7}$	$9.8x10^{-7}$	$2.9x10^{-6}$	$5.8x10^{-8}$	$2.4x10^{-3}$	$1.4x10^{-5}$	$2.9x10^{-2}$
Kirtland Underground Munitions and Maintenance Storage Complex (KUMMSC)	$1.3x10^{-3}$	$2.1x10^{-4}$	$4.2x10^{-4}$	$1.5x10^{-1}$	$1.0x10^{-8}$	$4.0x10^{-6}$	$7.5x10^{-6}$	$9.9x10^{-9}$	$7.4x10^{-4}$	$9.8x10^{-7}$	$1.5x10^{-1}$
Loop Housing	$9.1x10^{-5}$	$1.4x10^{-5}$	$2.7x10^{-5}$	$1.4x10^{-2}$	$2.2x10^{-8}$	$6.0x10^{-7}$	$1.9x10^{-6}$	$5.8x10^{-8}$	$7.0x10^{-3}$	$2.1x10^{-6}$	$2.1x10^{-2}$

Table D.2–7. Summary of Dose Estimates to Each of the SNL/NM Receptors from No Action Alternative Emissions (continued)

RECEPTORS	SPR (Bldg. 6590)	ACRR (Mo-99) (Bldg. 6588)	ACRR (DP) (Bldg. 6588)	HCF (Bldg. 6580)	HERMES III (Bldg. 970)	MWL	RMWMF (Bldg. 6920)	ECF (Bldg. 905)	NGF (Bldg. 870)	RITS (Bldg. 970)	TOTAL
Lovelace Hospital	$8.4x10^{-5}$	$1.3x10^{-5}$	$2.4x10^{-5}$	$1.3x10^{-2}$	$4.1x10^{-9}$	$7.2x10^{-7}$	$2.4x10^{-6}$	$1.3x10^{-8}$	$1.2x10^{-3}$	$4.1x10^{-7}$	$1.4x10^{-2}$
Manzano Offices (Fire Station)	$2.7x10^{-4}$	$4.3x10^{-5}$	$8.6x10^{-5}$	$3.3x10^{-2}$	$2.6x10^{-9}$	$1.2x10^{-6}$	$4.9x10^{-6}$	$5.1x10^{-9}$	$3.5x10^{-4}$	$2.6x10^{-7}$	$3.4x10^{-2}$
Maxwell Housing	$1.3x10^{-4}$	$1.9x10^{-5}$	$3.7x10^{-5}$	$2.1x10^{-2}$	$3.0x10^{-9}$	$9.0x10^{-7}$	$2.3x10^{-6}$	$1.0x10^{-8}$	$9.4x10^{-4}$	$2.9x10^{-6}$	$2.2x10^{-2}$
National Atomic Museum	$1.2x10^{-4}$	$1.9x10^{-5}$	$3.6x10^{-5}$	$1.8x10^{-2}$	$3.3x10^{-8}$	$1.0x10^{-6}$	$2.1x1^{-6}$	$5.2x10^{-8}$	$7.2x10^{-3}$	$2.4x10^{-6}$	$2.5x10^{-2}$
Pershing Park Housing	$7.6x10^{-5}$	$1.4x10^{-5}$	$2.7x10^{-5}$	$1.4x10^{-2}$	$1.1x10^{-8}$	$5.3x10^{-7}$	$1.7x10^{-6}$	$3.2x10^{-8}$	$3.5x10^{-3}$	$1.1x10^{-6}$	$1.7x10^{-2}$
Riding Club/Stables	$5.1x10^{-4}$	$8.8x10^{-5}$	$1.8x10^{-4}$	$6.2x10^{-2}$	$5.5x10^{-9}$	$1.8x10^{-6}$	$5.5x10^{-6}$	$8.5x10^{-8}$	$4.5x10^{-4}$	$5.2x10^{-7}$	$6.3x10^{-2}$
Sandia Base Elementary	$7.8x10^{-5}$	$1.2x10^{-5}$	$2.3x10^{-5}$	$1.2x10^{-2}$	$1.3x10^{-8}$	$6.1x10^{-7}$	$2.5x10^{-6}$	$3.2x10^{-8}$	$4.1x10^{-3}$	$1.3x10^{-6}$	$1.7x10^{-2}$
Sandia Federal Credit Union	$1.3x10^{-4}$	$2.0x10^{-5}$	$3.8x10^{-5}$	$1.9x10^{-2}$	$4.1x10^{-8}$	$6.9x10^{-7}$	$2.1x10^{-6}$	$9.7x10^{-7}$	$1.2x10^{-2}$	$4.1x10^{-6}$	$3.1x10^{-2}$
Shandiin Day Care Center	$1.2x10^{-4}$	$1.8x10^{-5}$	$3.4x10^{-5}$	$1.7x10^{-2}$	$2.0x10^{-8}$	$9.7x10^{-7}$	$2.0x10^{-6}$	$3.5x10^{-8}$	$4.6x10^{-3}$	$1.9x10^{-6}$	$2.2x10^{-2}$
Sunport (Bldg. 760)	$1.4x10^{-4}$	$3.6x10^{-5}$	$7.0x10^{-5}$	$3.7x10^{-2}$	$1.6x10^{-8}$	$1.0x10^{-6}$	$3.2x10^{-6}$	$2.4x10^{-8}$	$1.7x10^{-3}$	$1.6x10^{-6}$	$3.9x10^{-2}$
Sunport (Bldg. 1064)	$1.1x10^{-4}$	$1.7x10^{-5}$	$3.2x10^{-5}$	$1.6x10^{-2}$	$1.1x10^{-8}$	$8.2x10^{-7}$	$2.8x10^{-6}$	$2.3x10^{-8}$	$2.0x10^{-3}$	$1.1x10^{-6}$	$1.8x10^{-2}$
Technical Onsite Inspection Facility	$1.9x10^{-4}$	$3.0x10^{-5}$	$5.9x10^{-5}$	$2.8x10^{-2}$	$3.1x10^{-7}$	$9.7x10^{-7}$	$2.7x10^{-6}$	$6.9x10^{-9}$	$3.9x10^{-3}$	$2.9x10^{-5}$	$3.3x10^{-2}$
Veterans Affairs Medical Center	$1.6x10^{-4}$	$2.3x10^{-5}$	$4.5x10^{-5}$	$2.5x10^{-2}$	$5.2x10^{-9}$	$7.9x10^{-7}$	$2.5x10^{-6}$	$1.4x10^{-8}$	$1.4x10^{-3}$	$5.1x10^{-7}$	$2.7x10^{-2}$
Wherry Elementary School	$9.8x10^{-5}$	$1.5x10^{-5}$	$2.8x10^{-5}$	$1.5x10^{-2}$	$1.0x10^{-8}$	$7.9x10^{-7}$	$2.5x10^{-6}$	$2.4x10^{-8}$	$2.9x10^{-3}$	$9.8x10^{-7}$	$1.8x10^{-2}$
Zia Park Housing	$1.2x10^{-4}$	$1.9x10^{-5}$	$3.7x10^{-5}$	$1.9x10^{-2}$	$2.2x10^{-8}$	$8.9x10^{-7}$	$2.9x10^{-6}$	$4.2x10^{-8}$	$3.9x10^{-3}$	$2.1x10^{-6}$	$2.4x10^{-2}$
OFFSITE POTENTIAL MEI (mrem/yr)											
Albuquerque City Offices	$1.9x10^{-4}$	$4.4x10^{-5}$	$5.4x10^{-5}$	$4.1x10^{-2}$	$5.5x10^{-9}$	$6.4x10^{-6}$	$2.2x10^{-5}$	$1.3x10^{-7}$	$1.0x10^{-2}$	$1.2x10^{-8}$	$5.1x10^{-2}$
East Resident	$1.2x10^{-5}$	$1.8x10^{-5}$	$3.4x10^{-6}$	$1.4x10^{-2}$	$1.5x10^{-11}$	$4.3x10^{-6}$	$1.7x10^{-5}$	$1.2x10^{-7}$	$9.5x10^{-3}$	$3.2x10^{-11}$	$2.4x10^{-2}$
Eubank Gate Area (Bldg. 8895)	$1.0x10^{-4}$	$3.3x10^{-5}$	$3.2x10^{-5}$	$2.8x10^{-2}$	$2.8x10^{-8}$	$4.9x10^{-6}$	$1.9x10^{-5}$	$1.9x10^{-7}$	$1.7x10^{-2}$	$6.1x10^{-8}$	$4.5x10^{-2}$

Table D.2–7. Summary of Dose Estimates to Each of the SNL/NM Receptors from No Action Alternative Emissions (concluded)

RECEPTORS	SPR (Bldg. 6590)	ACRR (Mo-99) (Bldg. 6588)	ACRR (DP) (Bldg. 6588)	HCF (Bldg. 6580)	HERMES III (Bldg. 970)	MWL	RMWMF (Bldg. 6920)	ECF (Bldg. 905)	NGF (Bldg. 870)	RITS (Bldg. 970)	TOTAL
Four Hills Subdivision	$1.2x10^{-4}$	$3.5x10^{-5}$	$3.6x10^{-5}$	$3.1x10^{-2}$	$8.6x10^{-9}$	$4.9x10^{-6}$	$1.9x10^{-5}$	$1.3x10^{-7}$	$1.0x10^{-2}$	$1.9x10^{-8}$	$4.1x10^{-2}$
Isleta Gaming Palace	$2.7x10^{-5}$	$2.0x10^{-5}$	$7.7x10^{-6}$	$1.7x10^{-2}$	$4.1x10^{-11}$	$4.6x10^{-6}$	$9.1x10^{-5}$	$1.2x10^{-7}$	$9.6x10^{-3}$	$9.0x10^{-11}$	$2.7x10^{-2}$
Northeast Resident	$5.3x10^{-5}$	$2.4x10^{-5}$	$1.6x10^{-5}$	$2.0x10^{-2}$	$8.3x10^{-10}$	$4.5x10^{-6}$	$1.8x10^{-6}$	$1.2x10^{-7}$	$9.6x10^{-3}$	$1.8x10^{-9}$	$3.0x10^{-2}$
Seismic Center (USGS)	$3.3x10^{-5}$	$2.1x10^{-5}$	$9.6x10^{-6}$	$1.7x10^{-2}$	$1.1x10^{-10}$	$4.4x10^{-6}$	$1.8x10^{-5}$	$1.2x10^{-7}$	$9.5x10^{-3}$	$2.3x10^{-10}$	$2.7x10^{-2}$
Tijeras Arroyo (West)	$2.7x10^{-4}$	$5.7x10^{-5}$	$7.8x10^{-5}$	$5.3x10^{-2}$	$7.9x10^{-9}$	$7.5x10^{-6}$	$2.4x10^{-5}$	$1.3x10^{-7}$	$1.0x10^{-2}$	$1.7x10^{-8}$	$6.3x10^{-2}$
POPULATION DOSE (person-rem/yr)	**$2.54x10^{-2}$**	**$5.35x10^{-3}$**	**$7.2x10^{-3}$**	**4.61**	**$2.1x10^{-7}$**	**$6.16x10^{-4}$**	**$3.24x10^{-3}$**	**$4.19x10^{-6}$**	**0.322**	**$4.5x10^{-7}$**	**5.0**

Sources: DOE 1997e, SNL/NM 1998a
ACRR: Annular Core Research Reactor
DP: Defense Programs
ECF: Explosive Components Facility
HCF: Hot Cell Facility
HERMES III: High-Energy Radiation Megavolt Electron Source III
KAFB: Kirtland Air Force Base
MEI: maximally exposed individual
Mo-99: molybdenum-99 and other medical isotopes production
mrem/yr: millirems per year
MWL: Mixed Waste Landfill
NGF: Neutron Generator Facility
rem: Roentgen equivalent, man
RITS: Radiographic Integrated Test Stand
RMWMF: Radioactive and Mixed Waste Management Facility
SPR: Sandia Pulsed Reactor
USGS: U.S. Geological Survey

Table D.2–8. Summary of Dose Estimates to each of the SNL/NM Receptors from Expanded Operations Alternative Emissions from each SNL/NM Facility

RECEPTORS	SPR (Bldg. 6590)	ACRR (Mo-99) (Bldg. 6588)	ACRR (DP) (Bldg. 6588)	HCF (Bldg. 6580)	HERMES III (Bldg. 970)	MWL	RMWMF (Bldg. 6920)	ECF (Bldg. 905)	NGF (Bldg. 870)	RITS (Bldg. 970)	TOTAL
ONSITE and/or SPECIAL POTENTIAL MEI (mrem/yr)											
Building 20706	$4.6x10^{-4}$	$4.5x10^{-5}$	$1.3x10^{-4}$	0.072	$2.1x10^{-7}$	$7.8x10^{-7}$	$2.3x10^{-6}$	$1.0x10^{-7}$	$5.6x10^{-3}$	$9.3x10^{-6}$	$7.8x10^{-2}$
Building 24499	$3.0x10^{-4}$	$3.0x10^{-5}$	$8.6x10^{-5}$	0.048	$5.9x10^{-8}$	$6.0x10^{-7}$	$2.0x10^{-6}$	$7.3x10^{-8}$	$6.1x10^{-3}$	$2.6x10^{-6}$	$5.5x10^{-2}$
Civil Engineering Research Facility (Bldg. 5701)	$2.8x10^{-4}$	$2.8x10^{-5}$	$8.0x10^{-5}$	0.039	$1.5x10^{-9}$	$6.8x10^{-7}$	$4.4x10^{-6}$	$2.1x10^{-9}$	$1.5x10^{-4}$	$6.9x10^{-8}$	$4.0x10^{-2}$
Child Development Center-East	$3.2x10^{-4}$	$3.0x10^{-5}$	$8.6x10^{-5}$	0.05	$3.9x10^{-8}$	$8.3x10^{-7}$	$1.8x10^{-6}$	$2.9x10^{-8}$	$3.6x10^{-3}$	$1.7x10^{-6}$	$5.4x10^{-2}$
Child Development Center-West	$3.6x10^{-4}$	$3.3x10^{-5}$	$9.5x10^{-5}$	0.061	$6.0x10^{-9}$	$8.4x10^{-7}$	$2.1x10^{-6}$	$8.3x10^{-9}$	$7.3x10^{-4}$	$2.7x10^{-7}$	$6.2x10^{-2}$
Coronado Club	$3.2x10^{-4}$	$3.0x10^{-5}$	$8.7x10^{-5}$	0.05	$4.4x10^{-8}$	$6.3x10^{-7}$	$1.8x10^{-6}$	$3.2x10^{-8}$	$4.2x10^{-3}$	$1.9x10^{-6}$	$5.5x10^{-2}$
Coyote Canyon Control Center	$2.8x10^{-4}$	$2.7x10^{-5}$	$7.9x10^{-5}$	0.039	$1.2x10^{-9}$	$5.7x10^{-7}$	$4.0x10^{-6}$	$2.2x10^{-9}$	$1.6x10^{-4}$	$5.2x10^{-8}$	$4.0x10^{-2}$
Golf Course Clubhouse	$1.7x10^{-3}$	$1.8x10^{-4}$	$5.4x10^{-4}$	0.23	$6.2x10^{-8}$	$2.0x0^{-6}$	$4.7x10^{-6}$	$1.1x10^{-8}$	$6.7x10^{-4}$	$2.7x10^{-6}$	$2.3x10^{-1}$
Golf Course Maintenance Area	$1.1x10^{-3}$	$1.1x10^{-4}$	$3.3x10^{-4}$	0.15	$1.1x10^{-7}$	$1.5x10^{-6}$	$3.9x10^{-6}$	$1.7x10^{-8}$	$9.7x10^{-4}$	$4.9x10^{-6}$	$1.5x10^{-1}$
Lovelace Respiratory Research Institute	$2.7x10^{-4}$	$2.6x10^{-5}$	$7.4x10^{-5}$	0.041	$9.5x10^{-10}$	$5.5x10^{-7}$	$4.0x10^{-6}$	$1.8x10^{-9}$	$1.3x10^{-4}$	$4.2x10^{-8}$	$4.2x10^{-2}$
Kirtland Elementary School	$3.5x10^{-4}$	$3.3x10^{-5}$	$9.3x10^{-5}$	0.06	$5.2x10^{-9}$	$8.2x10^{-7}$	$2.1x10^{-6}$	$7.6x10^{-9}$	$7.3x10^{-4}$	$2.3x10^{-7}$	$6.1x10^{-2}$
KAFB Firestation #4 (Bldg. 9002)	$4.0x10^{-4}$	$4.0x10^{-5}$	$1.1x10^{-4}$	0.058	$4.6x10^{-10}$	$1.3x10^{-6}$	$9.8x10^{-6}$	$2.4x10^{-9}$	$1.8x10^{-4}$	$2.1x10^{-8}$	$5.9x10^{-2}$
KAFB Landfill	$6.0x10^{-4}$	$6.1x10^{-5}$	$1.8x10^{-4}$	0.088	$4.2x10^{-7}$	$9.8x10^{-7}$	$2.9x10^{-6}$	$5.8x10^{-8}$	$2.4x10^{-3}$	$1.8x10^{-5}$	$9.1x10^{-2}$
Kirtland Underground Munitions and Maintenance Storage Complex (KUMMSC)	$4.3x10^{-3}$	$4.2x10^{-4}$	$1.3x10^{-3}$	0.50	$3.0x10^{-8}$	$4.0x10^{-6}$	$7.5x10^{-6}$	$9.9x10^{-9}$	$7.4x10^{-4}$	$1.3x10^{-6}$	$5.1x10^{-1}$

Table D.2–8. Summary of Dose Estimates to each of the SNL/NM Receptors from Expanded Operations Alternative Emissions from each SNL/NM Facility (continued)

RECEPTORS	SPR (Bldg. 6590)	ACRR (Mo-99) (Bldg. 6588)	ACRR (DP) (Bldg. 6588)	HCF (Bldg. 6580)	HERMES III (Bldg. 970)	MWL	RMWMF (Bldg. 6920)	ECF (Bldg. 905)	NGF (Bldg. 870)	RITS (Bldg. 970)	TOTAL
Loop Housing	$2.9x10^{-4}$	$2.9x10^{-5}$	$8.2x10^{-5}$	0.046	$6.3x10^{-8}$	$6.0x10^{-7}$	$1.9x10^{-6}$	$5.8x10^{-8}$	$7.0x10^{-3}$	$2.8x10^{-6}$	$5.3x10^{-2}$
Lovelace Hospital	$2.6x10^{-4}$	$2.5x10^{-5}$	$7.2x10^{-5}$	0.043	$1.2x10^{-8}$	$7.2x10^{-7}$	$2.4x10^{-6}$	$1.3x10^{-8}$	$1.2x10^{-3}$	$5.4x10^{-7}$	$4.5x10^{-2}$
Manzano Offices (Fire Station)	$8.6x10^{-4}$	$8.7x10^{-5}$	$2.6x10^{-4}$	0.11	$7.6x10^{-9}$	$1.2x10^{-6}$	$4.9x10^{-6}$	$5.1x10^{-9}$	$3.5x10^{-4}$	$3.4x10^{-7}$	$1.1x10^{-1}$
Maxwell Housing	$4.1x10^{-4}$	$3.9x10^{-5}$	$1.1x10^{-4}$	0.070	$8.6x10^{-9}$	$9.0x10^{-9}$	$2.3x10^{-6}$	$1.0x10^{-8}$	$9.4x10^{-4}$	$3.8x10^{-7}$	$7.2x10^{-2}$
National Atomic Museum	$3.9x10^{-4}$	$3.7x10^{-5}$	$1.1x10^{-4}$	0.061	$9.5x10^{-8}$	$1.0x10^{-6}$	$2.1x10^{-6}$	$5.2x10^{-8}$	$7.2x10^{-3}$	$3.2x10^{-6}$	$6.9x10^{-2}$
Pershing Park Housing	$2.4x10^{-4}$	$2.8x10^{-5}$	$8.0x10^{-5}$	0.047	$3.2x10^{-8}$	$5.3x10^{-7}$	$1.7x10^{-6}$	$3.2x10^{-8}$	$3.5x10^{-3}$	$1.4x10^{-6}$	$5.1x10^{-2}$
Riding Stables	$1.6x10^{-3}$	$1.8x10^{-4}$	$5.3x10^{-4}$	0.21	$1.6x10^{-8}$	$1.8x10^{-6}$	$5.5x10^{-6}$	$8.5x10^{-8}$	$4.5x10^{-4}$	$6.9x10^{-7}$	$2.1x10^{-1}$
Sandia Base Elementary	$2.5x10^{-4}$	$2.4x10^{-5}$	$6.8x10^{-5}$	0.039	$3.8x10^{-8}$	$6.1x10^{-7}$	$2.5x10^{-6}$	$3.2x10^{-8}$	$4.1x10^{-3}$	$1.7x10^{-6}$	$4.3x10^{-2}$
Sandia Federal Credit Union	$4.0x10^{-4}$	$3.9x10^{-5}$	$1.1x10^{-4}$	0.064	$1.2x10^{-7}$	$6.9x10^{-7}$	$2.1x10^{-6}$	$9.7x10^{-8}$	$1.2x10^{-2}$	$5.4x10^{-6}$	$7.7x10^{-2}$
Shandiin Day Care Center	$3.7x10^{-4}$	$3.6x10^{-5}$	$1.0x10^{-4}$	0.058	$5.8x10^{-8}$	$9.7x10^{-7}$	$2.0x10^{-6}$	$3.5x10^{-8}$	$4.6x10^{-3}$	$2.5x10^{-6}$	$6.3x10^{-2}$
Sunport (Bldg. 1064)	$3.4x10^{-4}$	$3.3x10^{-5}$	$9.5x10^{-5}$	0.055	$3.2x10^{-8}$	$8.2x10^{-7}$	$2.8x10^{-6}$	$2.3x10^{-8}$	$2.0x10^{-3}$	$1.4x10^{-6}$	$5.7x10^{-2}$
Sunport (Bldg. 760)	$4.3x10^{-4}$	$7.1x10^{-5}$	$2.1x10^{-4}$	0.12	$4.7x10^{-8}$	$1.0x10^{-6}$	$3.2x10^{-6}$	$2.4x10^{-8}$	$1.7x10^{-3}$	$2.1x10^{-6}$	$1.2x10^{-1}$
Technical Onsite Inspection Facility	$6.1x10^{-4}$	$6.0x10^{-5}$	$1.8x10^{-4}$	0.093	$8.9x10^{-7}$	$9.7x10^{-7}$	$2.7x10^{-6}$	$6.9x10^{-9}$	$3.9x10^{-3}$	$3.8x10^{-5}$	$9.8x10^{-2}$
Veterans Affairs Medical Center	$5.0x10^{-4}$	$4.6x10^{-5}$	$1.3x10^{-4}$	0.082	$1.5x10^{-8}$	$7.9x10^{-7}$	$2.5x10^{-6}$	$1.4x10^{-8}$	$1.4x10^{-3}$	$6.8x10^{-7}$	$8.4x10^{-2}$
Wherry Elementary School	$3.1x10^{-4}$	$2.9x10^{-5}$	$8.4x10^{-5}$	0.049	$3.0x10^{-8}$	$7.9x10^{-7}$	$2.5x10^{-6}$	$2.4x10^{-8}$	$2.9x10^{-3}$	$1.3x10^{-6}$	$5.2x10^{-2}$
Zia Park Housing	$3.9x10^{-4}$	$3.8x10^{-5}$	$1.1x10^{-4}$	0.062	$6.4x10^{-8}$	$8.9x10^{-7}$	$2.9x10^{-6}$	$4.2x10^{-8}$	$3.9x10^{-3}$	$2.8x10^{-6}$	$6.6x10^{-2}$

Table D.2–8. Summary of Dose Estimates to each of the SNL/NM Receptors from Expanded Operations Alternative Emissions from each SNL/NM Facility (concluded)

RECEPTORS	SPR (Bldg. 6590)	ACRR (Mo-99) (Bldg. 6588)	ACRR (DP) (Bldg. 6588)	HCF (Bldg. 6580)	HERMES III (Bldg. 970)	MWL	RMWMF (Bldg. 6920)	ECF (Bldg. 905)	NGF (Bldg. 870)	RITS (Bldg. 970)	TOTAL
OFFSITE POTENTIAL MEI (mrem/yr)											
Albuquerque City Offices	$6.0x10^{-4}$	8.910^{-5}	$1.6x10^{-4}$	0.14	$1.6x10^{-8}$	$6.4x10^{-6}$	$2.2x10^{-5}$	$1.3x10^{-7}$	$1.0x10^{-2}$	$7.2x10^{-7}$	$1.5x10^{-1}$
East Resident	$3.7x10^{-5}$	$3.5x10^{-5}$	$1.0x10^{-5}$	0.048	$4.2x10^{-11}$	$4.3x10^{-6}$	$1.7x10^{-5}$	$1.2x10^{-7}$	$9.5x10^{-3}$	$1.9x10^{-9}$	$5.8x10^{-2}$
Eubank Gate Area (Bldg. 8895)	$3.3x10^{-4}$	$6.5x10^{-5}$	$9.5x10^{-5}$	0.095	$8.1x10^{-8}$	$4.9x10^{-6}$	$1.9x10^{-5}$	$1.9x10^{-7}$	$1.7x10^{-2}$	$3.6x10^{-6}$	$1.1x10^{-1}$
Four Hills Subdivision	$3.8x10^{-4}$	$7.0x10^{-5}$	$1.1x10^{-4}$	0.10	$2.5x10^{-8}$	$4.9x10^{-6}$	$1.9x10^{-5}$	$1.3x10^{-7}$	$1.0x10^{-2}$	$1.1x10^{-6}$	$1.1x10^{-1}$
Isleta Gaming Palace	$8.6x10^{-5}$	$4.0x10^{-5}$	$2.3x1^{-5}$	0.056	$1.2x10^{-10}$	$4.6x10^{-6}$	$2.1x10^{-5}$	$1.2x10^{-7}$	$9.6x10^{-3}$	$5.1x10^{-9}$	$6.6x10^{-2}$
Northeast Resident	$1.7x10^{-4}$	$4.8x10^{-5}$	$4.7x10^{-5}$	0.068	$2.4x10^{-9}$	$4.5x10^{-6}$	$1.8x10^{-5}$	$1.2x10^{-7}$	$9.6x10^{-3}$	$1.1x10^{-7}$	$7.8x10^{-2}$
Seismic Center (USGS)	$1.1x10^{-4}$	$4.2x10^{-5}$	$2.9x10^{-5}$	0.058	$3.1x10^{-10}$	$4.4x10^{-6}$	$1.8x10^{-5}$	$1.2x10^{-7}$	$9.5x10^{-3}$	$1.4x10^{-8}$	$6.8x10^{-2}$
Tijeras Arroyo (West)	$8.6x10^{-4}$	$1.1x10^{-4}$	$2.3x10^{-4}$	0.18	$2.3x10^{-8}$	$7.5x10^{-6}$	$2.4x10^{-5}$	$1.3x10^{-7}$	$1.0x10^{-2}$	1.010^{-6}	$1.9x10^{-1}$
POPULATION DOSE (person-rem)	**0.0801**	**0.0107**	**0.0216**	**15.4**	**$6.06x10^{-7}$**	**$6.16x10^{-4}$**	**$3.24x10^{-3}$**	**$4.19x10^{-6}$**	**0.322**	**$2.69x10^{-5}$**	**15.8**

Sources: DOE 1997e, SNL/NM 1998a
ACRR: Annular Core Research Reactor
DP: Defense Programs
ECF: Explosive Components Facility
HCF: Hot Cell Facility
HERMES II: High-Energy Radiation Megavolt Electron Source II
KAFB: Kirtland Air Force Base
MEI: maximally exposed individual
Mo-99: molybdenum-99 and other medical isotopes production
mrem/yr: millirems per year
MWL: Mixed Waste Landfill
NGF: Neutron Generator Facility
rem: Roentgen equivalent, man
RITS: Radiographic Integrated Test Stand
RMWMF: Radioactive and Mixed Waste Management Facility
SPR: Sandia Pulsed Reactor
USGS: U.S. Geological Survey

Table D.2–9. Summary of Dose Estimates to each of the SNL/NM Receptors from Reduced Operations Alternative Emissions from each SNL/NM Facility

RECEPTORS	SPR (Bldg. 6590)	ACRR (Mo-99) (Bldg. 6588)	ACRR (DP) (Bldg. 6588)	HCF (Bldg. 6580)	HERMES III (Bldg. 970)	MWL	RMWMF (Bldg. 6920)	ECF (Bldg. 905)	NGF (Bldg. 870)	RITS (Bldg. 970)	TOTAL
ONSITE and/or SPECIAL POTENTIAL MEI (mrem/yr)											
Building 20706	$4.4x10^{-5}$	$4.9x10^{-6}$	0	$2.2x10^{-3}$	$5.8x10^{-9}$	$7.8x10^{-7}$	$2.3x10^{-6}$	$1.0x10^{-8}$	$5.6x10^{-3}$	$1.2x10^{-6}$	$7.8x10^{-3}$
Building 24499	$2.9x10^{-5}$	$3.3x10^{-6}$	0	$1.4x10^{-3}$	$1.6x10^{-9}$	$6.0x10^{-7}$	$2.0x10^{-6}$	$7.3x10^{-9}$	$6.1x10^{-3}$	$3.3x10^{-7}$	$7.5x10^{-3}$
Civil Engineering Research Facility (Bldg. 5701)	$2.7x10^{-5}$	$3.1x10^{-6}$	0	$1.2x10^{-3}$	$4.2x10^{-11}$	$6.8x10^{-7}$	$4.4x10^{-6}$	$2.1x10^{-10}$	$1.5x10^{-4}$	$8.6x10^{-9}$	$1.4x10^{-3}$
Child Development Center-East	$3.0x10^{-5}$	$3.3x10^{-6}$	0	$1.5x10^{-3}$	$1.1x10^{-9}$	$8.3x10^{-7}$	$1.8x10^{-6}$	$2.9x10^{-9}$	$3.6x10^{-3}$	$2.1x10^{-7}$	$5.1x10^{-3}$
Child Development Center-West	$3.4x10^{-5}$	$3.6x10^{-6}$	0	$1.8x10^{-3}$	$1.7x10^{-10}$	$8.4x10^{-7}$	$2.1x10^{-6}$	$8.3x10^{-10}$	$7.3x10^{-4}$	$3.4x10^{-8}$	$2.6x10^{-3}$
Coronado Club	$3.0x10^{-5}$	$3.3x10^{-6}$	0	$1.5x10^{-3}$	$1.2x10^{-9}$	$6.3x10^{-7}$	$1.8x10^{-6}$	$3.2x10^{-9}$	$4.2x10^{-3}$	$2.4x10^{-7}$	$5.7x10^{-3}$
Coyote Canyon Control Center	$2.7x10^{-5}$	$2.9x10^{-6}$	0	$1.2x10^{-3}$	$3.3x10^{-11}$	$5.7x10^{-7}$	$4.0x10^{-6}$	$2.2x10^{-10}$	$1.6x10^{-4}$	$6.5x10^{-9}$	$1.4x10^{-3}$
Golf Course Clubhouse	$1.6x10^{-4}$	$2.0x10^{-5}$	0	$7.0x10^{-3}$	$1.7x10^{-9}$	$2.0x10^{-6}$	$4.7x10^{-6}$	$1.1x10^{-9}$	$6.7x10^{-4}$	$3.4x10^{-7}$	$7.9x10^{-3}$
Golf Course Maintenance Area	$1.0x10^{-4}$	$1.2x10^{-5}$	0	$4.4x10^{-3}$	$3.1x10^{-9}$	$1.5x10^{-6}$	$3.9x10^{-6}$	$1.7x10^{-9}$	$9.7x10^{-4}$	$6.1x10^{-7}$	$5.5x10^{-3}$
Lovelace Respiratory Research Institute	$2.6x10^{-5}$	$2.8x10^{-6}$	0	$1.2x10^{-3}$	$2.6x10^{-11}$	$5.5x10^{-7}$	$4.0x10^{-6}$	$1.8x10^{-10}$	$1.3x10^{-4}$	$5.3x10^{-9}$	$1.4x10^{-3}$
Kirtland Elementary School	$3.3x10^{-5}$	$3.6x10^{-6}$	0	$1.8x10^{-3}$	$1.4x10^{-10}$	$8.2x10^{-7}$	$2.1x10^{-6}$	$7.6x10^{-10}$	$7.3x10^{-4}$	$2.9x10^{-8}$	$2.5x10^{-3}$
KAFB Firestation #4 (Bldg. 9002)	$3.8x10^{-5}$	$3.7x10^{-6}$	0	$1.7x10^{-3}$	$1.3x10^{-11}$	$1.3x10^{-6}$	$9.8x10^{-6}$	$2.4x10^{-10}$	$1.8x10^{-4}$	$2.6x10^{-9}$	$1.9x10^{-3}$
KAFB Landfill	$5.7x10^{-5}$	$6.7x10^{-6}$	0	$2.6x10^{-3}$	$1.2x10^{-8}$	$9.8x10^{-7}$	$2.9x10^{-6}$	$5.8x10^{-9}$	$2.4x10^{-3}$	$2.3x10^{-6}$	$5.0x10^{-3}$
Kirtland Underground Munitions and Maintenance Storage Complex (KUMMSC)	$4.1x10^{-4}$	$4.6x10^{-5}$	0	$1.5x10^{-2}$	$8.3x10^{-10}$	$4.0x10^{-6}$	$7.5x10^{-6}$	$9.9x10^{-10}$	$7.4x10^{-4}$	$1.6x10^{-7}$	$1.6x10^{-2}$
Loop Housing	$2.8x10^{-5}$	$3.2x10^{-6}$	0	$1.4x10^{-3}$	$1.7x10^{-9}$	$6.0x10^{-7}$	$1.9x10^{-6}$	$5.8x10^{-9}$	$7.0x10^{-3}$	$3.5x10^{-7}$	$8.4x10^{-3}$

Table D.2–9. Summary of Dose Estimates to each of the SNL/NM Receptors from Reduced Operations Alternative Emissions from each SNL/NM Facility (continued)

RECEPTORS	SPR (Bldg. 6590)	ACRR (Mo-99) (Bldg. 6588)	ACRR (DP) (Bldg. 6588)	HCF (Bldg. 6580)	HERMES III (Bldg. 970)	MWL	RMWMF (Bldg. 6920)	ECF (Bldg. 905)	NGF (Bldg. 870)	RITS (Bldg. 970)	TOTAL
Lovelace Hospital	$2.5x10^{-4}$	$2.7x10^{-6}$	0	$1.3x10^{-3}$	$3.3x10^{-10}$	$7.2x10^{-7}$	$2.4x10^{-6}$	$1.3x10^{-9}$	$1.2x10^{-3}$	$6.8x10^{-8}$	$2.8x10^{-3}$
Manzano Offices (Fire Station)	$8.2x10^{-5}$	$9.5x10^{-6}$	0	$3.3x10^{-3}$	$2.1x10^{-10}$	$1.2x10^{-6}$	$4.9x10^{-6}$	$5.1x10^{-10}$	$3.5x10^{-4}$	$4.3x10^{-8}$	$3.8x10^{-3}$
Maxwell Housing	$3.9x10^{-5}$	$4.3x10^{-6}$	0	$1.2x10^{-3}$	$2.4x10^{-10}$	$9.0x10^{-7}$	$2.3x10^{-6}$	$1.0x10^{-9}$	$9.4x10^{-4}$	$4.8x10^{-8}$	$2.2x10^{-3}$
National Atomic Museum	$3.7x10^{-5}$	$4.0x10^{-6}$	0	$1.8x10^{-3}$	$2.6x10^{-9}$	$1.0x10^{-6}$	$2.1x10^{-6}$	$5.2x10^{-9}$	$7.2x10^{-3}$	$4.0x10^{-7}$	$9.0x10^{-3}$
Pershing Park Housing	$2..3x10^{-5}$	$3.1x10^{-6}$	0	$1.4x10^{-3}$	$8.9x10^{-10}$	$5.3x10^{-7}$	$1.7x10^{-6}$	$3.2x10^{-9}$	$3.5x10^{-3}$	$1.8x10^{-7}$	$4.9x10^{-3}$
Riding Club	$1.5x10^{-4}$	$2.0x10^{-5}$	0	$6.2x10^{-3}$	$4.4x10^{-10}$	$1.8x10^{-6}$	$5.5x10^{-6}$	$8.5x10^{-9}$	$4.5x10^{-4}$	$8.6x10^{-8}$	$6.8x10^{-3}$
Sandia Base Elementary	$2.4x10^{-5}$	$2.6x10^{-6}$	0	$1.2x10^{-3}$	$1.1x10^{-9}$	$6.1x10^{-7}$	$2.5x10^{-6}$	$3.2x10^{-9}$	$4.1x10^{-3}$	$2.1x10^{-7}$	$4.1x10^{-3}$
Sandia Federal Credit Union	$3.8x10^{-5}$	$4.3x10^{-6}$	0	$1.9x10^{-3}$	$3.3x10^{-9}$	$6.9x10^{-7}$	$2.1x10^{-6}$	$9.7x10^{-9}$	$1.2x10^{-2}$	$6.8x10^{-7}$	$1.4x10^{-2}$
Shandiin Day Care Center	$3.5x10^{-5}$	$3.9x10^{-6}$	0	$1.7x10^{-3}$	$1.6x10^{-9}$	$9.7x10^{-7}$	$2.0x10^{-6}$	$3.5x10^{-9}$	$4.6x10^{-3}$	$3.1x10^{-7}$	$6.3x10^{-3}$
Sunport (Bldg. 1064)	$3.2x10^{-5}$	$3.6x10^{-6}$	0	$1.6x10^{-3}$	$8.9x10^{-10}$	$8.2x10^{-7}$	$2.8x10^{-6}$	$2.3x10^{-9}$	$2.0x10^{-3}$	$1.8x10^{-7}$	$3.6x10^{-3}$
Sunport (Bldg. 760)	$4.1x10^{-5}$	$7.7x10^{-6}$	0	$3.7x10^{-3}$	$1.3x10^{-9}$	$1.0x10^{-6}$	$3.2x10^{-6}$	$2.4x10^{-9}$	$1.7x10^{-3}$	$2.6x10^{-7}$	$5.4x10^{-3}$
Technical Onsite Inspection Facility	$5.8x10^{-5}$	$6.5x10^{-6}$	0	$2.8x10^{-3}$	$2.5x10^{-8}$	$9.7x10^{-7}$	$2.7x10^{-6}$	$6.9x10^{-10}$	$3.9x10^{-3}$	$4.8x10^{-6}$	$6.8x10^{-3}$
Veterans Affairs Medical Center	$4.8x10^{-5}$	$5.0x10^{-6}$	0	$2.5x10^{-3}$	$4.2x10^{-10}$	$7.9x10^{-7}$	$2.5x10^{-6}$	$1.4x10^{-9}$	$1.4x10^{-3}$	$8.5x10^{-8}$	$4.0x10^{-3}$
Wherry Elementary School	$2.9x10^{-5}$	$3.2x10^{-6}$	0	$1.5x10^{-3}$	$8.3x10^{-10}$	$7.9x10^{-7}$	$2.5x10^{-6}$	$2.4x10^{-9}$	$2.9x10^{-3}$	$1.6x10^{-7}$	$4.5x10^{-3}$
Zia Park Housing	$3.7x10^{-5}$	$4.1x10^{-6}$	0	$1.9x10^{-3}$	$1.8x10^{-9}$	$8.9x10^{-7}$	$2.9x10^{-6}$	$4.2x10^{-9}$	$3.9x10^{-3}$	$3.5x10^{-7}$	$5.8x10^{-3}$

Table D.2–9. Summary of Dose Estimates to each of the SNL/NM Receptors from Reduced Operations Alternative Emissions from each SNL/NM Facility (concluded)

RECEPTORS	SPR (Bldg. 6590)	ACRR (Mo-99) (Bldg. 6588)	ACRR (DP) (Bldg. 6588)	HCF (Bldg. 6580)	HERMES III (Bldg. 970)	MWL	RMWMF (Bldg. 6920)	ECF (Bldg. 905)	NGF (Bldg. 870)	RITS (Bldg. 970)	TOTAL
OFFSITE POTENTIAL MEI (mrem/yr)											
Albuquerque City Offices	$5.7x10^{-4}$	$9.7x10^{-6}$	0	$4.1x10^{-3}$	$4.4x10^{-10}$	$6.4x10^{-6}$	$2.2x10^{-5}$	$1.3x10^{-8}$	$1.0x10^{-2}$	$9.0x10^{-8}$	$1.5x10^{-2}$
East Resident	$3.5x10^{-6}$	$3.8x10^{-6}$	0	$1.4x10^{-3}$	$1.2x10^{-12}$	$4.3x10^{-6}$	$1.7x10^{-5}$	$1.2x10^{-8}$	$9.5x10^{-3}$	$2.4x10^{-10}$	$1.1x10^{-2}$
Eubank Gate Area (Bldg. 8895)	$3.1x10^{-5}$	$7.1x10^{-6}$	0	$2.8x10^{-3}$	$2.2x10^{-9}$	$4.9x10^{-6}$	$1.9x10^{-5}$	$1.9x10^{-8}$	$1.7x10^{-2}$	$4.5x10^{-7}$	$2.0x10^{-2}$
Four Hills Subdivision	$3.6x10^{-5}$	$7.6x10^{-6}$	0	$3.1x10^{-3}$	$6.9x10^{-10}$	$4.9x10^{-6}$	$1.9x10^{-5}$	$1.3x10^{-8}$	$1.0x10^{-2}$	$1.4x10^{-7}$	$1.0x10^{-2}$
Isleta Gaming Palace	$8.2x10^{-6}$	$4.4x10^{-6}$	0	$1.7x10^{-3}$	$3.3x10^{-12}$	$4.6x10^{-6}$	$2.1x10^{-5}$	$1.2x10^{-8}$	$9.6x10^{-3}$	$6.4x10^{-10}$	$1.1x10^{-2}$
Northeast Resident	$1.6x10^{-5}$	$5.2x10^{-6}$	0	$2.0x10^{-3}$	$6.6x10^{-11}$	$4.5x10^{-6}$	$1.8x10^{-5}$	$1.2x10^{-8}$	$9.6x10^{-3}$	$1.4x10^{-8}$	$1.2x10^{-2}$
Seismic Center (USGS)	$1.0x10^{-5}$	$4.6x10^{-6}$	0	$1.7x10^{-3}$	$8.6x10^{-12}$	$4.4x10^{-6}$	$1.8x10^{-5}$	$1.2x10^{-8}$	$9.5x10^{-3}$	$1.8x10^{-9}$	$1.1x10^{-2}$
Tijeras Arroyo (West)	$8.2x10^{-5}$	$1.2x10^{-5}$	0	$5.3x10^{-3}$	$6.4x10^{-10}$	$7.5x10^{-6}$	$2.4x10^{-5}$	$1.3x10^{-8}$	$1.0x10^{-2}$	$1.3x10^{-7}$	$1.5x10^{-2}$
POPULATION DOSE (person-rem/yr)	**$7.6x10^{-3}$**	**$1.2x10^{-3}$**	**0**	**0.461**	**$1.7x10^{-8}$**	**$6.16x10^{4}$**	**$3.24x10^{3}$**	**$4.19x10^{7}$**	**0.322**	**$3.4x10^{-6}$**	**0.80**

Sources: DOE 1997e, SNL/NM 1998a
ACRR: Annular Core Research Reactor
DP: Defense Programs
ECF: Explosive Components Facility
HCF: Hot Cell Facility
HERMES III: High-Energy Radiation Megavolt Electron Source III
KAFB: Kirtland Air Force Base
MEI: maximally exposed individual
Mo-99: molybdenum-99 and other medical isotopes production
mrem/yr: millirems per year
MWL: Mixed Waste Landfill
NGF: Neutron Generator Facility
rem: Roentgen equivalent, man
RITS: Radiographic Integrated Test Stand
RMWMF: Radioactive and Mixed Waste Management Facility
SPR: Sandia Pulsed Reactor
USGS: U.S. Geological Survey

Table D.2–10. Calculated Dose Assessment Results for SNL/NM Operations Under No Action, Expanded Operations, and Reduced Operations Alternatives

DOSE TO RECEPTOR	LOCATION	ALTERNATIVE		
		NO ACTION	EXPANDED OPERATIONS	REDUCED OPERATIONS
TOTAL DOSE MEI	KUMMSC	0.15 mrem/yr	0.51 mrem/yr	NA
	Eubank Gate Building 8895	NA	NA	0,02 mrem/yr
COLLECTIVE DOSE TO POPULATION	Within 50-mi radius	5.0 person-rem/yr	15.8 person-rem/yr	0.80 person-rem/yr

Sources: SNL/NM 1998a, DOE 1997e
KUMMSC: Kirtland Underground Munitions and Maintenance Storage Complex
MEI: maximally exposed individual
mi: miles
mrem/yr: millirems per year
NA: not applicable